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VOLUME X

SEPTEMBER, 1915

NUMBER 3



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# BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

## Pruning—Plant Physiology as Related to Pruning

By W. M. Atwood, Associate Professor of Botany, Department of Horticulture Experiment Station, Oregon Agricultural College

[INTRODUCTION.—The Department of Botany, in co-operation with the Division of Horticulture, has prepared this treatise on pruning, Dr. Atwood of the Department of Botany preparing the chapter on Plant Physiology as Related to Pruning. The Division of Horticulture has been working for a number of years on research problems related to pruning. As this work is in the preliminary stages, it will be a number of years before a complete report can be made. However, in the various papers in this article we are presenting a few of the facts which we have been able to determine, coupled with observations that have been made in various fruit-growing districts.—C. I. Lewis, Chief, Division of Horticulture.]

FOR the orchardist most correctly to deal with the problems confronting him, it is necessary to have a clear idea of the complicated "living machinery" upon which he is dependent for profit or loss. It is worth while to know how the tree removes from the soil the substances it needs; how it manufactures its food, and finally how both the complicated food materials and water are distributed and used by the tree. The knowledge of a few facts of this nature is the necessary foundation on which is being built the successful practices of the practical fruit grower of today.

If the finest terminal roots of most living plants be carefully examined there is found on their surfaces a fuzzy growth resembling fine hairs. As the root is the region in which the plant absorbs the water and minerals of the soil, it is evident that this absorbing region of the root—the root hair region—must tremendously increase the absorbing area of the root. Figure 1 shows a young root with the root hair zone well developed. These fine outgrowths of the root enable it to get into very intimate contact with the finest soil particles which contain necessary minerals and which are surrounded by films of soil-moisture that become available to the plant. The necessity of carefully guarding the root hair region of trees from injury so far as is possible is emphasized by the behavior of any young tree upon transplanting. Figure 2 shows the way in which a twig of a pine tree was affected by

transplanting, the tree loses a large percentage of the finer roots, and hence of the most active water-absorbing tissues. The region where the needles were so noticeably shortened is the region

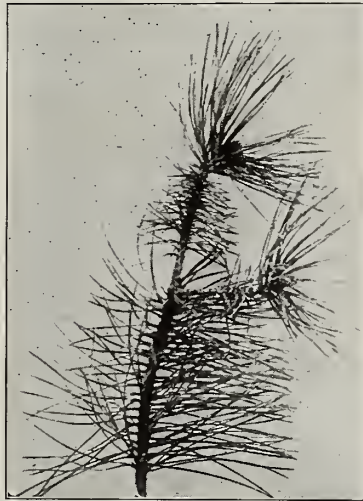


FIGURE 2. Effect of transplanting upon water supply. Short needles produced after transplanting. (After B. M. Duggar, "Plant Physiology." Macmillans.)

which developed immediately following transplanting and before the pine had been able to develop new water-absorbing root tissues. It thus becomes perfectly clear why the orchardist when purchasing trees from a nursery never leaves a large leafy top after first setting out the young tree. Temporarily the young tree is less able to supply its leaves with water than previous to its removal from the nursery. The judicious cutting back of the top for a little while enables the tree soon to develop its root system back into balance with the top.

The root hairs do not absorb water from the soil as a sponge or blotter takes up water when placed in a wet place. If a root hair is examined under a microscope we find that inside the

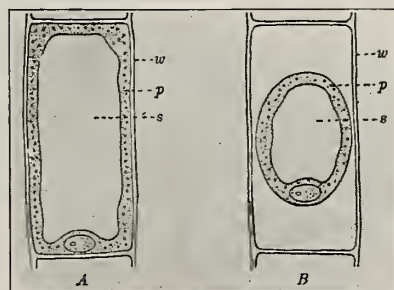


FIGURE 3. Root Cells. "A," in normal condition; "B," cell deprived of its normal water. (After Bergen and Davis, "Principles of Botany." Ginn & Co.)

[EDITOR'S NOTE.—This is the first of a series of articles covering completely the subject of "Pruning" that will appear in "Better Fruit." "The Study of Fruit Buds," by E. J. Kraus, will appear in the October edition. "Pruning Young Trees," by Professor C. I. Lewis, will appear in the November and December issues. "Pruning the Bearing Apple and Pear Tree," by V. R. Gardner, will appear in the January issue. "Pruning the Bearing Prune Tree," by V. R. Gardner, will appear in the February issue.]

thin outer wall there is a lining of the jelly-like living substance called protoplasm, which is present in all animals and plants wherever there is life. Water tends to be taken into the root hair by a force called osmosis. When pure water is separated from the cell substances by the thin film of protoplasm, we find that the water can readily enter but the substances within the hair cannot get outside of the protoplasm. The law of osmosis is that when two liquids

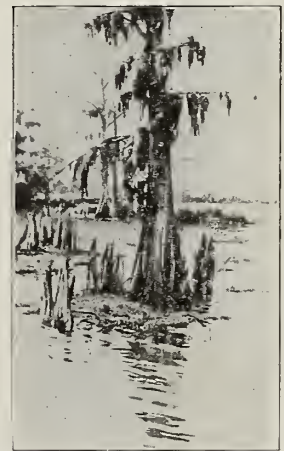


FIGURE 4. A swamp enduring tree, the Cypress (*Taxodium distichum*, Rich.) Note the root projections or "knees" above the water surface. (After Bergen and Davis, "Principles of Botany." Ginn & Co.)

of different density are separated from each other by protoplasm which permits the passage of the less dense only, the less dense liquid moves in through the protoplasm into the more dense liquid. There would be no object in here explaining this water intake if it did not help to make clear the reason, at least in part, for the unfavorable effects of alkaline soils upon plants. Figure 3 shows at "A" a root cell which is in normal condition. If such a cell is surrounded by a soil sufficiently alkaline, water, instead of moving into the root, tends to move in the opposite direction—that is, it moves out of the root, leaving a collapsed living cell as shown at "B." It is thus possible for a tree to be unable to get needful water in too alkaline a location, even though

FIGURE 1. Seedling of radish showing root hairs. (After B. M. Duggar, "Plant Physiology." Macmillans.)



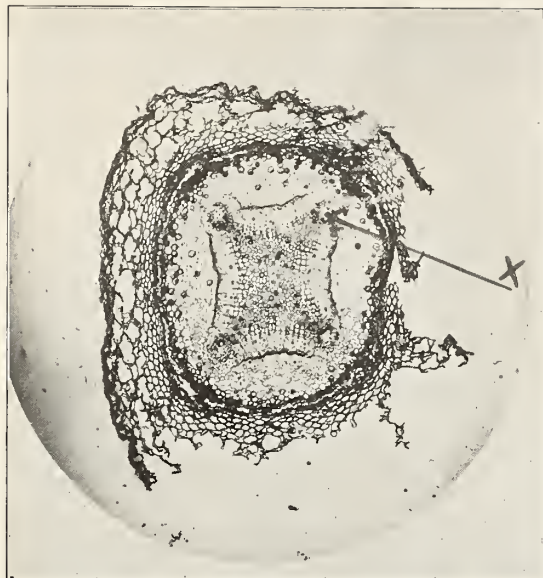


FIGURE 5. Cross section of a young pine root. (*Pinus Strobus*, L.)

moisture be abundant. Fortunately soils of this character are not common.

Before following water from the root hair region in its journey over the tree, one more point must be mentioned. Root hairs, to perform their work of water intake properly, must have a certain amount of air in the soil. If the soil be too wet or "water-logged," injury results to the tree because of the unfavorable conditions imposed upon the root. Only a few trees, such as the cypress (Figure 4), are adapted to meet such as excess of water about their roots. The significance of this fact in orchard cultivation and drainage is clear.

If we cut a thin slice across a root, we are able to see towards its center the water-carrying vessels which take the water absorbed by the root hairs and carry it up to the stem. Figure 5 shows at X the water-carrying region of a young pine root, while Figure 6 shows at X the region in a young vine stem through which the water travels after leaving the root. We can also see in this cross cut of the young stem the cambium region at "C." The cambium is practically the only region in which

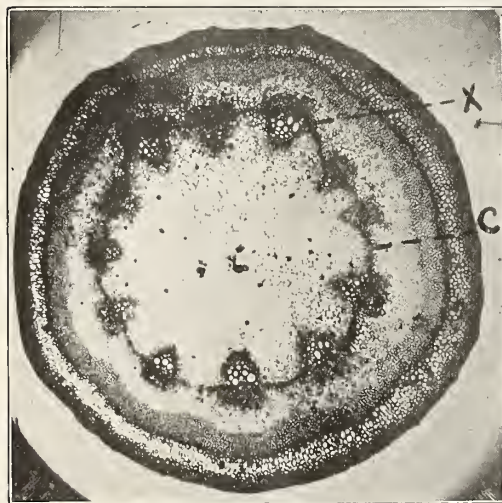


FIGURE 6. Cross section of young stem of "Pipe Vine." (*Aristolochia Sipho*, L'Her.)

any of our orchard trees develop so as to produce increase in diameter of the stem. As this is the only growing region, it is very evident that two grafted stems unite only at this one region, the cambium; hence the care which the orchardist exercises in making the two cambium regions come together.

The cambium lays down new wood each year, the latest wood always of course being the outer layer. The rings we often see running about the stump of a freshly hewn tree are the product of this yearly activity of the cam-

bium. Figure 7 illustrates the yearly rings of a stem, but if we would see more clearly just the cause of the ringed appearance of the wood, we find it necessary to magnify the wood at the region of one of these rings. This



FIGURE 7. Cross section of stem of the Redwood (*Sequoia sempervirens*, End.)

wood or water-carrying tissue, as illustrated in Figure 8, is composed of water ducts or cells. The wood laid down in the later summer is much more dense, as shown at "A," while the early summer wood is more porous and open, as we see at "S." This is partly explained by the fact that the water demands upon the tree are greater in the spring in proportion to the water-carrying tissues present, than later in the summer. The wood of the horticultural varieties, as the walnut (Figure 9) or the cherry (Figure 10), shows the difference in spring and late summer wood a little less conspicuously than Figure 8.

If we follow the ascent of the water up the stem, the two points of destination most of interest perhaps are the buds and the

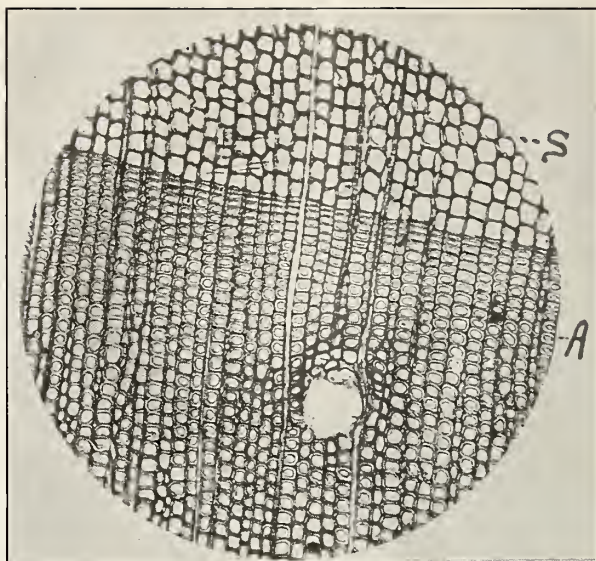


FIGURE 8. Magnified section of wood of the Pitch Pine (*Pinus resinosa*, Ait.) "A," late summer wood; "S," early summer wood.

leaves. Only in so far as water absorption from the root and water transfer through the stem is in normal condition can the young buds far up on the twigs open or perform their work. In the leaf we find the source of the majority of all the food which the plant produces and which enables the tree to grow or produce fruit. A very small proportion of the woody tissues or of fruit tissues are due to the so-called "foods" of the soil, but the large per cent is derived from true foods laid down in the leaves. This makes clear the great injury to an orchard resulting from any factor which reduces the leaf area of the tree beyond certain safe limits. If we cut across a leaf and then look at the exposed edge much magnified, we see something like the diagram of Figure 11. The green coloring of plants is particularly abundant in the leaf, and is located especially in the upper portions of the leaf, which are marked "palisade." On the under surface of the leaf will be seen little openings, one of which is marked

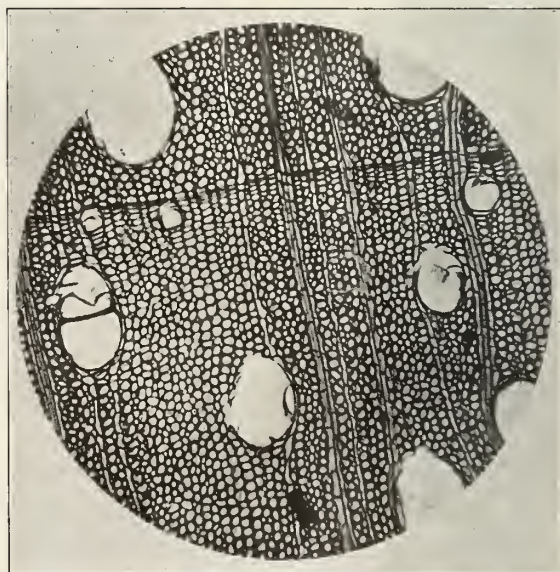


FIGURE 9. Magnified section of the wood of the Walnut (*Juglans nigra*, L.)



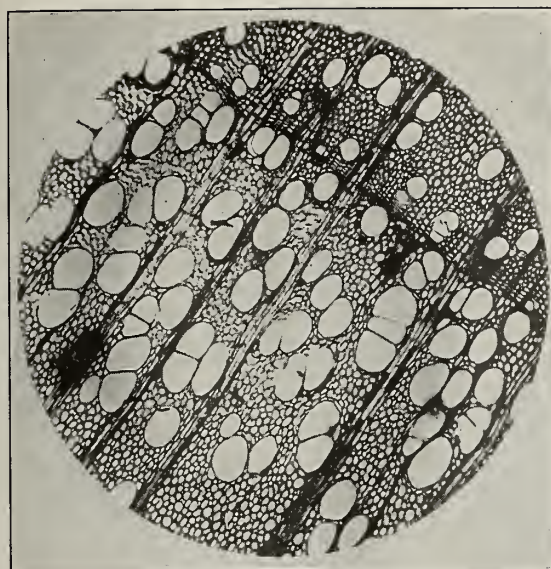


FIGURE 10. Magnified section of the wood of the Cherry. (*Prunus serotina*, Ehrh.)

cut it made parallel and close to the surface from which the limb arises, the wound will be in the best position to intercept the food materials passing down from the leaves through the inner "bark." (See Figure 14.) For similar reasons heading back is usually to a side limb rather than cutting to a bare stub.

From the above facts it should be evident that the growth and thrift of a tree is dependent upon various factors, among which we must include the fertility of the soil, the water supply about



FIGURE 13. Magnified section of the wood of the Linden or Basswood. (*Tilia Americana*, L.) "P," the food-carrying regions of the inner "bark."

"stoma." Through these openings the air has access to the interior of the leaf. The carbon dioxide, present in the air in small amounts, combines with moisture present in the leaf, under the influence of sunlight in the region of the green coloring bodies found in the leaf palisade tissue. The result is plant food in the form of starches and sugars. These air openings or stomata are present on the lower surface of an apple leaf to the extent of about 24,000 per square inch. Figure 12 shows such stomata photographed from the under side of a leaf.

The food laid down or manufactured in the leaf is distributed over the tree through certain regions of "food ducts" which are located in the inner "bark." Thus in Figure 13 we see in the cross cut of a basswood limb that the woody or water-carrying tissues are surrounded by certain regions of the "bark" (P) which are responsible for the distribution of food to the tree. It is a familiar fact that wounded animal tissue requires abundant food materials to repair and rebuild the injury. The food is supplied by the blood. In the case of plants, the food stream is distributed more slowly through the bark. It thus is evident that in removing a limb entirely, if the

the roots, their condition and development, the care with which the soil has been cultivated, and the character of the leafy top of the tree. The objects which are aimed at in pruning are always more effectively attained if, at



FIGURE 12. Photomicrograph of stomata on the under side of a leaf. (After F. E. Lloyd, "Physiology of Stomata.")

the same time that the top is being artificially altered, we bear in mind the various other conditions which surround the tree, of which we have spoken above, and which are often sufficiently effective to modify or do away entirely with the beneficial effects of the most "artistic" pruning unthinkingly practiced.

The application of these conditions to the problems of pruning in Oregon will be brought out more clearly by the portions of this article which follow.

During the last two or three years growers have been figuring on finding a cheaper receptacle than boxes for low-grade apples to

be shipped into certain territories. The Western Cooperage Company of Portland advises us they are getting ready to make quotations on partly made up Government standard apple barrels to submit to the various associations, with samples, showing how they would be shipped. The idea they are working on, they state, is a simple proposition to the packer, as the barrels will be partly made up, requiring no cooperating or special labor or tool work of any kind,

### South American Markets for Canned Goods

Although South America imports about \$15,000,000 worth of canned goods annually, the United States furnishes only about 18 per cent of the total, of which the principal item is canned salmon. That the sales of canned goods in this field can be greatly increased is the opinion of Commercial Agent E. A. Thayer, of the Department of Commerce, who recently completed an investigation of the Latin-American markets for this line of goods. The results of this investigation are incorporated in a monograph issued by the Bureau of Foreign and Domestic Commerce. This publication treats of the consumers' preferences, sales methods, pure-food laws, credit terms, shipping costs, and other subjects in the various countries of interest to American canners. Copies of this monograph (Special Agents Series No. 87) may be obtained from the Superintendent of Documents, at Washington, for five cents.

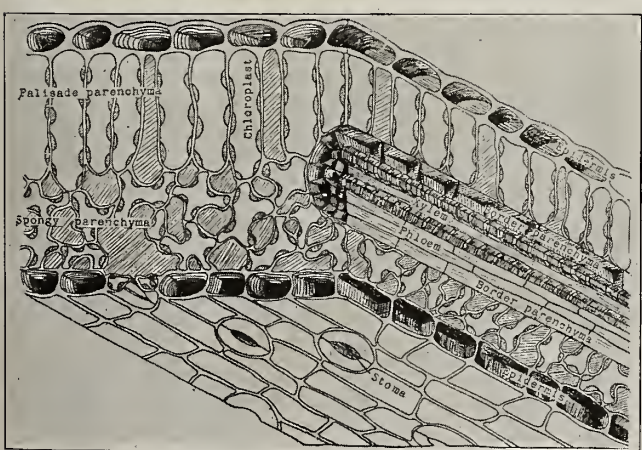


FIGURE 11. Diagram of the cut edge of a leaf to show the regions contained. Magnified. (After Stevens, "Plant Anatomy.")



FIGURE 14. Section of a stem to show the method of healing after removal of a branch. (After Curtis, "Nature and Development of Plants.")



# The Apple as a Farm Product—History and Present Status

## CHAPTER VI.

### The Ultimate Limits of Production.

THE ultimate limits of the production of apples may be reduced to two things: the cost and returns of the apple orchard and the consumption of apples. Either heading, in one sense, includes the other, and various headings might be worked out to include or to subdivide one or both of the above, but for the discussion of the underlying principles, these two are as apt as any.

In the previous chapters we have several times hinted at the direct dependence of production upon the profit or loss made by the grower. The principle is simply that apples or any other crop will be produced as long as a profit can be made, and will cease to be produced above the amount that will bring a profit. With a long-time crop, the extremes are true; a very low profit will be accepted on apples before the expensive orchard will be taken out or allowed to "go back," where with potatoes the farmer can next year leave this crop out of his rotation. This is the sum of the only logical conclusion that can be made from any observations of supply and demand in farm products, and the principle can only be amplified. Data on the cost of producing apples that is accurate enough to be used for calculations is not available. The absence of such data is only explainable by the fact that the very important science of cost accounts in agriculture is a new one. Though cost accounts on annual crops have been carefully worked out in detail in New York, Minnesota and elsewhere, dependable figures for the production cost of apples, including the six to ten unproductive first years, will not have been worked out for several years. Estimates are valuable in the absence of such exact data, and the most reliable of which the writer is aware are given here.

For 6.1 acres, containing 234 apple trees of mixed varieties and ages, over a ten-year period, M. C. Burritt, of Cornell University, found the average yearly cost per barrel of apples to be \$1.08. As regards Western box fruit, Mr. Shepard estimates the total harvesting cost of a box as reducible to 30 cents. (Under unfavorable circumstances his own cost was 35.9 cents.) From estimates, Mr. Shepard believes that about 30 cents will cover all cost of growing, from the end of one harvest to the beginning of the next, not including interest on investment. This makes 60 cents as a minimum, to which 35 to 55 cents per box must be added as the water or rail rate to New York. The overhead (interest, etc.) charges that must be added to this varies with the land value, and is best not included here in considering one of the Western orchard communities where land values are so unsettled, descending, as they have, from ridiculous boom prices to an indefinite, much lower status, with not enough land transfers to fix the cost.

By A. Millard, Jr., Hood River, Oregon.

Fifty-five or 60 cents, then, plus 35 to 50 cents, gives 90 cents to \$1.10, plus overhead charges, which must be received as wholesale prices in New York before the Western grower can make a profit. With 1912 and 1914 prices very little over \$1.00, and 1913 prices less, we can see that we do not appear to be far from the point at which Western growers can no longer raise apples.

Farmers' Bulletin No. 615, United States Department of Agriculture, gives the following figures on the average price received per bushel by growers the country over. This is interesting, but without other data on the *same* apples, it is of little value for comparison.

TABLE XI—PRICES RECEIVED BY GROWERS PER BARREL OF APPLES.

Year	June 15	July 15	Aug. 15
1910	No data	\$0.77	No data
1911	No data	.95	No data
1912	\$1.08	.82	No data
1913	1.01	.86	\$0.68
1914	1.36	.91	.75

Prices are to tend to be at least as low as they are at present—lower prices will tend toward greater consumption, and the pressure of the competition forced by lower prices will cause the lowering of the cost of production. This is the most important phase of the question. The writer has spent the past two summers in Hood River, Oregon, and in that short time has seen the change from the expensive policy of "clean cultivation is the only thing" to a general trend for intercropping and farm diversification. The by-product side of this discussion is a very promising one (Mr. Shepard estimates a saving of from \$10 to \$20 an acre from this source), and the phase of savings in distribution discussed in Chapter II. will undoubtedly have much effect in this direction.

The costs, then, may be lowered, and the returns will be a slight profit of necessity, but the marginal profit will tend to be low. Our conclusion is identical with our first premise: apples will be produced at any profit, and below profit they will not be produced.

The various phases of consumption of apples have been or will be treated elsewhere in this work, and here it is only necessary to sum up the question. To begin with, apples have always been the most popular and the leading fruit in this country, and this is a great advantage to the apple industry. The consumption depends to a large degree upon price, and the prices are to be low, so we can count upon increased consumption from this lowering of prices. There is the most intense sort of competition going on between the various fruits; this will strongly tend against increased consumption of apples. The apple has some advantages over other fruits; oranges cannot be cooked unless jellied, but the rate at which the grape-fruit has been taken up in the last few years is assurance of the mobility of public taste in fresh fruit. The story of the banana, the

poor man's fruit, is discussed in this treatise. Extending consumption by advertising and standardizing promises much within certain limits; these topics are discussed later. Various grades of apples are consumed, and the demand for the most expensive fruit is very limited. Such consumption buys to please its eyes, but the great consumption which affects the whole of the industry is the consumption of the lower grades of fruit. But one other factor need be mentioned. This is the population increase. Increased population means increased markets, but the markets will become none the less competitive.

## CHAPTER VII.

### What We Have Today.

In this chapter we will take up five of the most important phases of the present apple industry. We will take these up in the following order: Apples, staple or luxury; distributing organizations and individual or co-operative selling; increasing the demand—standardizing and advertising; competition of other fruits; and, finally, the various markets.

Apples are not at all a necessary of food. Fruits are not a necessary of food, since proteins, carbohydrates and fats can be obtained in more concentrated and cheaper forms in other foods. Much less, then, is any one fruit a necessary of food, since any other of many fruits can substitute for it. The query as to whether apples are a staple or a luxury is of no importance. It is not worth settling, since it is but a matter of definition. The farther from a luxury that apples will appear, due to the extent of the habit of their use and to the price at which they are sold, the greater will be the consumption. Apples will appear as a staple if the price is low enough. Bananas are a staple to a great number among our foreign population who have become accustomed to this fruit. Apples are selling wholesale and retail right beside oranges, grape-fruit, bananas and what not, and the price cannot but be an all-important factor to the buyers of these fruits. Elastic demand increases in about direct pro-

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**The Goulds Mfg. Co.**  
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portion; other things being equal, halving the price doubles the demand. Apples are, then, a staple or a luxury primarily as they vary in price, and, excluding the very highest grades of apples, the industry will benefit or suffer (other things being equal again) in proportion as apples are made by their price to appear a staple of the daily public diet.

We have discussed distributing organization of farm products in Chapter II. At this point we will consider something of the same question as it applies to apples. Commission and jobbing, etc., is practiced in the apple trade as outlined in the above mentioned chapter, but co-operative organizations, in as far as they concern apples, merit further discussion at this point. For nearly all examples of successful co-operative concerns, we must look to the far West or to specialized districts in the East. Some little work has been done on co-operative marketing of apples in New York communities, but the movements are not at all well developed. It is in the West only that co-operative apple marketing has been carried on thoroughly enough to give this practice anything like a trial. Mr. G. K. Holmes' statement of the essence of the matter admits of the results and possibilities of co-operative marketing under "good management" and "with conditions which permit success." This system is still on trial, and yet it has gained already such momentum that there must be something back of it. Northwest growers have had local associations and unions for several years, and the 1913-1914 crops were marketed to a large degree under the co-operative body known as the North Pacific Fruit Distributors. The Northwest growers are planning at present a large representative meeting at Spokane in February, 1915, at which it is expected that further marketing schemes along lines similar to those now in vogue will be evolved. Many evils of strict competition were not avoided by the Distributors; in spite of every effort self-competition went on, and over-heavy consignments and under-bidding, etc., all lent a hand in bringing low returns for the 1914 crop. The writer has been told by various men whose judgment should be of the best that the only salvation for co-operative fruit producers was complete pool of produce, with no chance for the insistence on the pick of the markets at certain times by any fruit raising community. This complete pool is without doubt a vital point, but the California Fruit Growers' Exchange has managed without such an absolute pool, the various localities retaining their respective identities, and though the circumstances in California are different, the writer believes that this one factor will not check the movement in the Northwest.

Each grower must decide in these communities whether he is to market individually or with the union or association. If the association is clearly bringing him the highest prices, there is no doubt as to what to do. But when,



## SPEED YOUR SALES



Our Apple and Case Labels will make your pack more attractive to the buyer's eye.

It's the best looking package that sells first and usually brings the fancy price.


Our experts on fruit packing will advise you free of charge.

WRITE NEAREST OFFICE

**Schmidt Lithograph Co.**

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### TAKE OFF YOUR HAT TO THE PUMPS THAT PUMP

# MYERS

Modern Water Lifters for Every Pumping Service—Cog Gear Hand and Windmill Pumps; New Style House and Cistern Pumps; Hydro-Pneumatic Pumps for Country Water Systems; Easy to Install Power Pumps, Pumping Jacks and Cylinders; Tank Pumps, Spray Pumps and Accessories. Our Service Department can help you solve your water problems. Write for Catalog and name of nearest dealer **F. E. MYERS & BRO.** 120 Orange Street, Ashland Pump & Hay Tool Works, ASHLAND, OHIO

as in many cases, the association does not bring in as good prices as certain individuals receive by standing out for themselves, it is a different question. The writer knows of a group of growers who are associated in a Northwest valley to market their apple crop independently of the local and of the Northwest association. These growers believe that they can grade higher, etc., and so get an earned better price. Is it right to say to these men, "We know you can get better prices selling alone, but we want you to sell through us so that the co-operative idea will gain strength"? The writer believes not. The burden of proof is on the co-operative association; they must prove themselves to be the most advantageous marketing agency before they can be allowed to market all the fruit. The small grower has been forced to join the association. He cannot handle his own marketing, and though the larger owner may believe in co-operation and eventually intend to join the movement, he cannot be logically asked to sell his apples for less than the highest price that they will bring, under any pretense of any motive whatsoever.

Within limits, a great deal may be done in the direction of getting a larger consumption of apples. We will consider this phase of increasing the de-

mand under the heads of standardizing and advertising.

The grading of apples has come from the West to the East. In the West what was then a revolutionary uniformity of pack became a necessity. The Western grower could only sell fruit at top prices to compete with Easterners who did not have the expensive long shipment, and hence there developed in the Rocky Mountain and North Pacific States systems of sizing, grading and packing which have very vitally affected the apple industry. Perhaps the most important function of grading is that in thus standardizing the marketable product there is taken a long step in bringing the consumer closer to the producer. This standardizing has also allowed much of the change from commission to jobbing marketing, and thus accomplished a great deal toward the simplification of distribution. Standardizing has its drawbacks; the Chicago commission men mention some of these, but nevertheless standardization is a most decided advance in agricultural marketing. We cannot accomplish anything by clinging to antiquated methods. We must make what progress we can by adapting ourselves skillfully to the inevitable new systems.



WE WILL SAVE YOU MONEY ON YOUR

# Fruit Case Labels

Quality Guaranteed.

Write for Prices and Samples.

**THE SIMPSON & DOELLER CO.**

E. SHELLEY MORGAN, Northwestern Manager

1423-24 Northwestern Bank Building

PORTLAND, OREGON

We have a fine line of new stock Apple Box Labels. Samples on application.

When the Sulzer bill was before the House of Representatives, the International Apple Shippers' Association prepared a pamphlet in support of the bill, in which they submitted among many other figures, the following tables:

TABLE XII—BARRELED APPLE EXPORTS, UNITED STATES AND CANADA

Five-Year Period	United States	Canada
1882-1887.....	2,354,256	585,277
1887-1892.....	3,115,107	1,480,106
1892-1897.....	3,904,224	2,578,255
1897-1902.....	2,859,628	2,450,101
1902-1907.....	8,154,552	4,353,103
1907-1912.....	4,310,474	5,048,305

TABLE XIII—PERCENTAGES OF EXCESS, U. S. AND CANADIAN EXPORTS

1882-1887, U. S. excess over Canada.....	300%
1887-1892, U. S. excess over Canada.....	110%
1892-1897, U. S. excess over Canada.....	51%
1897-1902, U. S. excess over Canada.....	16%
1892-1907, U. S. excess over Canada.....	87%
1907-1912, Canada's excess over U. S.....	14%

This pamphlet of the Shippers' Association laid the Canadian gains largely to the Canadian Fruit Market Act, which had at this time been in effect some years.

A grading law has been in effect during the present season (1914) in New York State, and although it is too early to pass final judgment upon this it is certain that the first year's practice of the law has not been either an unqualified success or an unqualified failure. The season was not one for a fair trial, but decidedly one for a severe trial. There were many complaints, but these came mainly from the smaller growers, who claimed to be unable to pack inside the law without unjustifiable expense, and these growers asked for lower grades and for wider limits in the higher grades. It appears that the law is not strictly enforceable and not being in the "agricultural code." Further, the law was hardly followed out to the letter during this year. The writer inspected several sample barrels of Standard-A Baldwins during December, 1914, on the New York Central pier, New York City, which needed much leeway before strictly falling under the specifications. The present plans are to go on under this law, and it would appear that grading will continue in New York State, but there are many difficulties to be overcome. There has been considerable agitation in New England in regard to apple grading. New England will have every disadvantage and will lack many of the advantages of New

York in putting through a grading measure. Fruit is even more scattered in New England than in New York State, and there is much less of it.

TABLE XIV—SEASONAL FITNESS OF APPLE VARIETIES  
[W. S. Thornber, Lewiston, Idaho, in "Better Fruit" for April, 1914]

Variety	Months to Be Used (Season)	Condition	Dessert	Sauce	Baking
Yellow Transparent.....	Aug. to Sept.	{ Unripe { Ripe	Good Excellent	Excellent Good	Poor Poor
Duchess .....	Aug. to Oct.	{ Unripe { Ripe	Poor Excellent	Excellent Good	Poor Good
McIntosh Red.....	Sept. to Oct.	{ Unripe { Ripe	Good Excellent	Excellent Good	Good Poor
Wealthy .....	Sept. to Oct.	{ Unripe { Ripe	Poor Excellent	Excellent Excellent	Excellent Good
Winter Banana .....	Oct. to Dec.	{ Unripe { Ripe	Good Excellent	Poor Poor	Poor Poor
Delicious .....	Oct. to Nov.	{ Unripe { Ripe	Good Excellent	Good Poor	Poor Poor
Jonathan .....	Nov. to Dec.	{ Unripe { Ripe	Good Excellent	Excellent Good	Good Poor
Grimes Golden.....	Nov. to Feb.	{ Unripe { Ripe	Poor Excellent	Excellent Good	Good Poor
Stayman .....	Dec. to Feb.	{ Unripe { Ripe	Poor Excellent	Excellent Good	Good Poor
Spitzenberg .....	Dec. to Jan.	{ Unripe { Ripe	Good Excellent	Excellent Excellent	Excellent Good
White Pearmain .....	Dec. to Mar.	{ Unripe { Ripe	Poor Excellent	Good Poor	Good Excellent
Rome Beauty .....	Dec. to Apr.	{ Unripe { Ripe	Poor Excellent	Excellent Good	Excellent Good
Yellow Newtown.....	Feb. to May	{ Unripe { Ripe	Good Excellent	Excellent Excellent	Excellent Good
Winesap .....	Feb. to Apr.	{ Unripe { Ripe	Good Excellent	Excellent Excellent	Good Good
Wagener .....	Feb. to May	{ Unripe { Ripe	Poor Good	Excellent Good	Excellent Poor
Arkansas Black.....	Feb. to May	{ Unripe { Ripe	Poor Poor	Excellent Poor	Excellent Good
Ben Davis .....	Feb. to May	{ Unripe { Ripe	Poor Poor	Good Poor	Good Poor

The International Apple Shippers' Association (Rochester) and in the last year or so the Apple Advertisers of America (Baltimore) have done a very considerable work in advertising apples, and they are vigorously pursuing plans for the future. The shippers distributed a great number of booklets on apple recipes several years ago, and they have just lately put on its feet the slogan, "Eat an apple a day—keep the doctor away." Mr. Phillips, secretary of the Shippers' Association, has shown the writer a large book of newspaper clippings on "Apple Day," 1914. The Shippers gave a cup to the city holding the best demonstrations, etc. (won this year by very enthusiastic Cincinnati), and the results of this Apple Day were felt all over the country. The Apple Advertisers work in harmony with the Shippers, and though much newer, the former organization has done a great

deal. Other agencies have done much; growers and dealers. Steinhardt & Kelley, fruit dealers of New York City, have had during this (1914-1915) season very catchy advertisements in the New York City subway and elevated cars, with the "Eat an Apple" slogan over the name and attractive picture of the "Skookum" apple, the particular Northwest brand that they are pushing this year. This advertising has value, and all apple men should support it. There is some danger of waste in the cross advertising of competing brands of boxed apples, etc., but in general the more said about apples the less the public will think about oranges. Any means of causing more intelligent use of apples is also productive advertising. The following table is an example of this; intelligent seasonal consumption of apples means satisfaction and future purpose:

Advertising can hardly create a want, but it can disclose a desire and thereby create a demand. "Sunkist" for oranges is a model for the results attainable for efforts toward a brand, and this has meant thousands of dollars in receipts and many more thousands in prestige to the California Fruitgrowers' Exchange.

There can be no question but that apples compete decidedly with every other fruit on the market, literally from mangoes to hickory nuts. In a previous chapter we have traced the history of the apple industry from the days when it did not even compete with the Mediterranean trade through the period when the apple was practically the only widely consumed orchard fruit. The first California shipment was made in 1867, but only in the last twenty years have oranges been keenly marketed up to the limit of consump-

Continued on page 26



# There's a bunch of joy in every puff of Prince Albert Tobacco

You don't have to call for an encyclopedia to find out how P. A. sets on your taste! You just open up your supply, fill your jimmy pipe or roll a makin's cigarette, strike a match *and-puff-away!* Because, you've found at last the brand that gives you all-the-time the pleasure you've always sought! The patented process fixes that —and cuts out bite and parch!

## PRINCE ALBERT

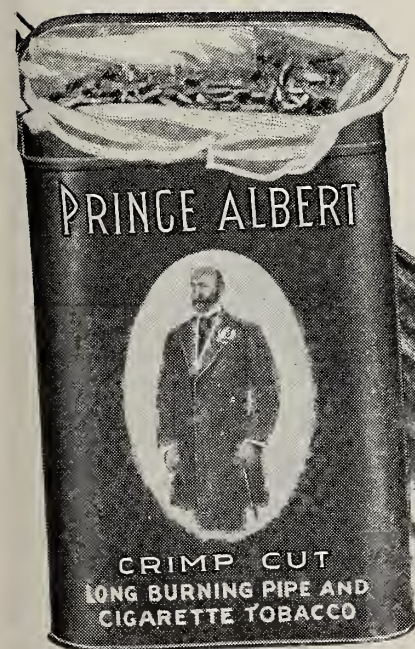
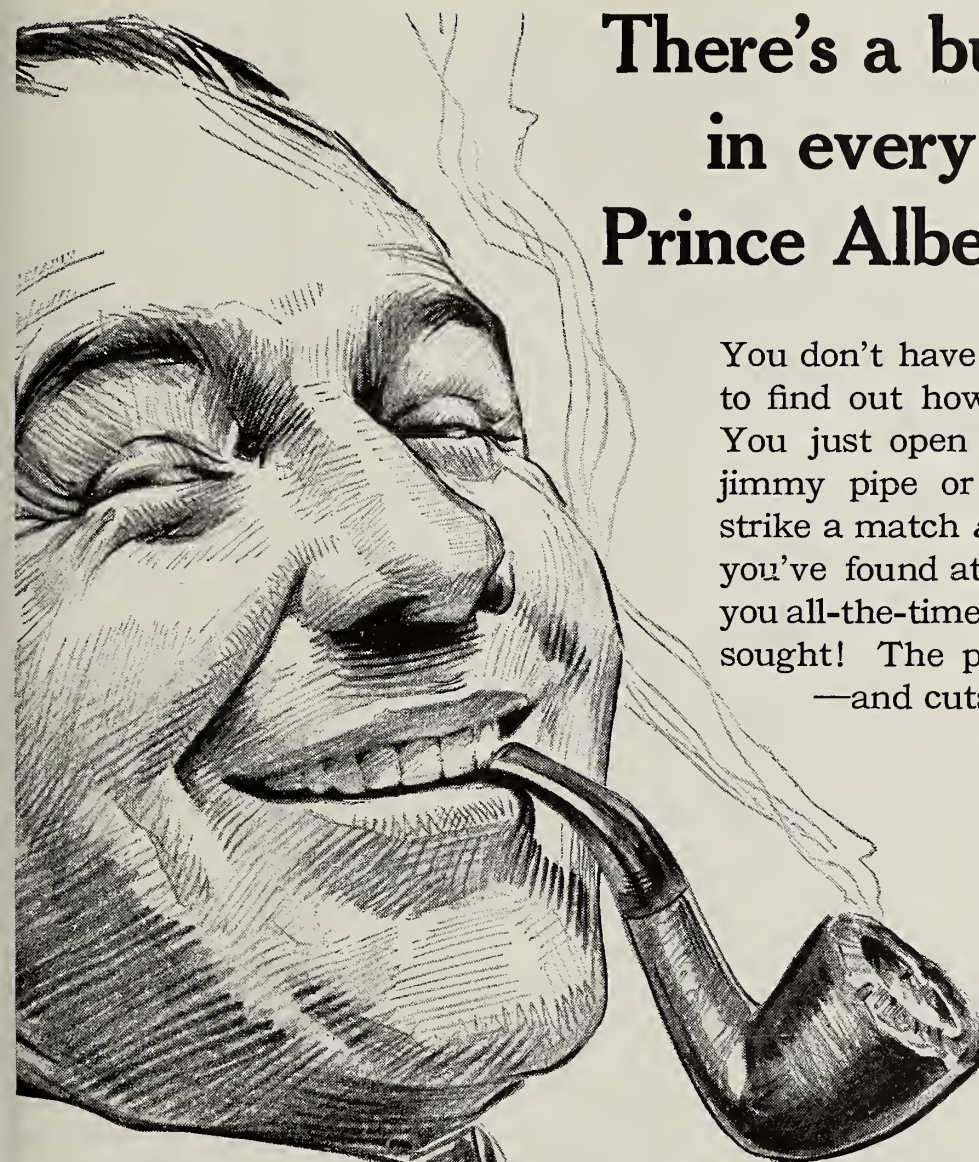
*the national joy smoke*

Copyright 1915  
by  
R. J. Reynolds  
Tobacco Co.

among tobaccos is like a real man among men. *You can make camp with it on short acquaintance!* Because you know from the first puff *that it is right!* It is a fact that Prince Albert is the friendliest smoke you ever put into a pipe or rolled into a cigarette. What we tell you is government-bond-good. And we say right here that our printed word has never yet struck within 50% of what P. A. will prove out! The heartiest enthusiasm of Prince Albert's friends does not overdraw the pleasure this tobacco *will give you!*

*Prince Albert is sold everywhere in toppy red bags, 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors and that classy pound crystal-glass humidor with the sponge-moistener top that keeps the tobacco in such fine condition.*

**R. J. REYNOLDS TOBACCO COMPANY**  
Winston-Salem, N. C.







## The Inside Inn

is a beautiful, permanent, up-to-date hotel occupying a magnificent site within the grounds of the Panama-Pacific International Exposition, amidst the most wonderful setting of scenery and architectural beauty the world has ever known. The Inside Inn is but a short walk from the State and Foreign Buildings and practically surrounded by the main Exhibit Palaces.

Appointments throughout the hotel are first-class. Following are our general rates:

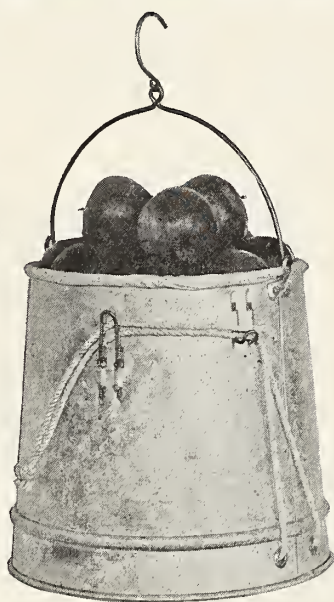
European plan, without bath, per day \$2, one person  
European plan, without bath, per day \$3, two persons  
European plan, with bath, per day, \$3 to \$5, one person  
European plan, with bath, per day, \$4 to \$7, two persons

Our motor busses meet all trains and steamers.

We shall be glad to give you any general information in regard to the Exposition or side trips upon request.

**ALBERT BETTENS, Manager**

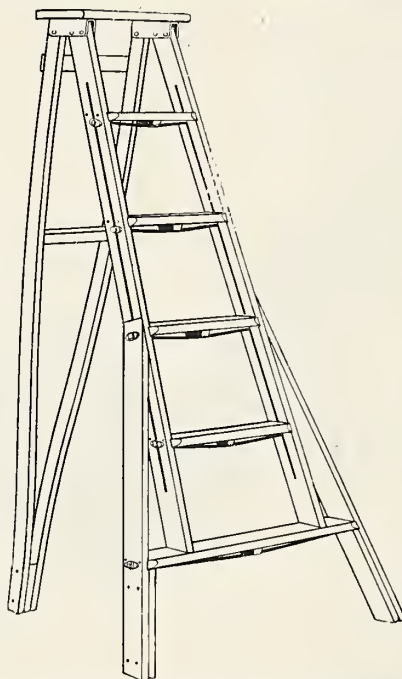
### Barnett Picking Pail



Made of heavy galvanized iron. Has a canvas sack lining with patented opening and closing device. If you like a picking pail you will want a Barnett.  
Price, each ..... \$1.50  
dozen lots ..... 16.50

These are but three of the articles shown in our new catalog of orchard and packing house supplies. Write for this catalog. We have the goods you need at the right prices.

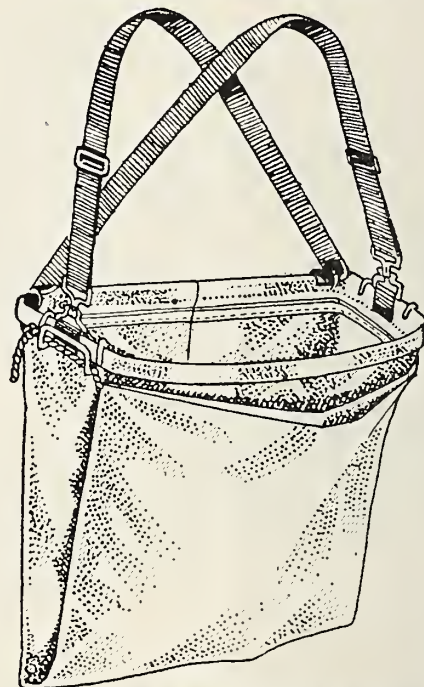
### Hardie Ladder



Only well seasoned spruce used in its construction, with each step braced. Strong and rigid, it weighs but 3 lbs. to the foot. A thoroughly high grade orchard ladder made in six to fourteen foot lengths.

Price, per foot ..... 35c

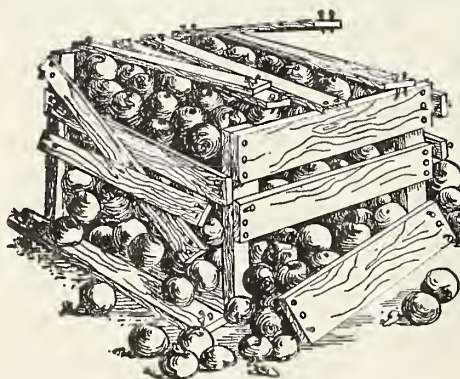
### Portland Picking Bag



A strong canvas sack with broad shoulder straps. Does not tire the picker and enables him to use both hands in picking. Easily and quickly emptied. A speedy and economical device for every orchard.

Price, single bag ..... \$1.50  
dozen lots ..... 15.00

**THE HARDIE MANUFACTURING CO., 49 North Front Street**  
**PORTLAND, OREGON**



BEFORE using Cement Coated Nails

### Western Cement Coated Nails for Western Growers

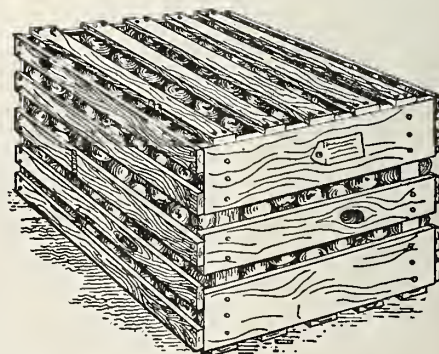
Our Cement Coated Nails are always of uniform length, gauge, head and count. Especially adapted to the manufacture of fruit boxes and crates. In brief, they are the Best on the Market.

Write for Growers' testimonials.

**Colorado Fuel & Iron Co.**

DENVER, COLORADO

Pacific Coast Sales Offices  
Portland, Spokane, San Francisco  
Los Angeles



AFTER use of C. F. & I. Co.'s Cement Coated Nails.



## Cause of Carbon Deposits

Lieutenant G. S. Bryan, government expert, in an article in the February issue of the Journal of the American Society of Naval Engineers, says: "Carbon may exist in a motor oil in two forms: First, as free carbon held in suspension, and, second, in combination with hydrogen, forming the numerous hydro-carbon compounds which go to make up the oil. The amount of free carbon in a well-refined oil is very small, and the objectionable carbon deposit is generally due to some other factor.

"The conditions attained in the cylinder of internal combustion engines that result in the formation of carbon are: First, high temperature, and, second, a limited supply of oxygen (air). References have been made to oil 'burning.' This term has been used rather loosely, as strictly speaking, 'burning means the combining of the vapors from the oil with the oxygen of the air, and does not include simple vaporization of the oil. Unless air is present in excess of that required for the combustion of the gasoline or fuel oil, and usually it is not, the oil cannot really burn. Under the intense heat, however, the inner surface of the oil film will be vigorously affected, and, in the absence of the air necessary for burning, three things may happen: Case 1. The compounds may volatilize with decomposition. Case 2. The compounds may decompose with the formation of free carbon and hydrogen. Case 3. The compounds may decompose with the formation of other hydro-carbon compounds of a different nature.

"The products formed in case 1 give no trouble, as being gaseous, they are carried out with the exhaust, whether burned or not. Of the products formed

## Is Your Name On Our Mailing List?

Our new catalogue is nearly ready for distribution.

The "Motion Picture Booklet" may be had for the asking.

You will be glad to get the regular numbers of the "Yuba Bulletin."

Fill in the coupon on page 20, send it to The Yuba Construction Company, 433 California Street, San Francisco, which insures your being up-to-date on the tractor question.

# THE SHOTWELL Box Marking Machine



This machine patented May 11, 1915.  
Patent No. 1138985.  
Any infringement will be prosecuted.

Is designed to print all the stamps required on a box of apples or other fruit at one stroke, in perfect alignment, saving time and labor. The machine prints the box to look as follows:

125 EXTRA FANCY WINESAP 40 LBS. NET JOHN DOE  
WENATCHEE, WASH.

It eliminates untidiness and unevenness in marking.

Saves time in picking up five different stamps separately, as all these stamps are placed on a wheel and the entire marking of the box as shown above is done in one movement and as quickly as one stamp is put on by the old method. The machine works automatically and is self-inking.

The Shotwell Box Marking Machine is a device that saves labor, does it neatly with dispatch. Made to be attached to any open end press and can be adjusted to mark any standard fruit box of any variety, apples, pears, peaches, oranges and lemons, etc.

It is made of malleable iron, assembled ready for use.

With each machine is included, without extra charge, eighteen number stamps, three grade stamps, one net weight stamp, one two-line grower's address stamp, ten variety stamps and an ink pad. Price, neatly packed ready for shipment, \$15.00, f.o.b. Wenatchee, Washington.

Ready for delivery July 15. Order promptly, as only a limited number will be assembled this year as orders are taken. For full descriptive illustrated catalog and further particulars, write

**Shotwell & Wilmeroth**  
WENATCHEE, WASH.

# Northwest Fruit Ladders



Not excelled by any Fruit Ladder  
on the market

We use Air-Dried Spruce Lumber. Rods under each step.

Price of ladder will surprise you. If your dealer does not sell the Northwest Fruit Ladder write us for prices and circular before buying. You will save money and get the best ladder.

Also Step Ladders

**Northwest Fence and Supply Co.**

Station A, Portland, Oregon



## THE IMPROVED HOOD RIVER BOX NAILING PRESS

Is the Best Device of its  
kind for the money  
on the market.

The fact that Hood River growers by the hundreds use them, is our best testimonial.

And those who have had experience with the press are satisfied; for by the elimination of box bruises it has aided in making the Hood River apple famous.

If you are in the market for a Nailing Press, it is to your advantage to investigate the HOOD RIVER PRESS and get our prices.

**W. G. SNOW**  
Hood River, Oregon



# Cold Store

Your apples and feed out to the consuming public as the market demands and prices suit.

California apple crop 1,500 cars short this season.

Los Angeles, the great distributing center of the Southwest.

Why not ship to this market?

*The things you will most want to consider in selecting a warehouse to cold store your apples:*

*Character and Responsibility of Company.*

*Location of Warehouse.*

*Capacity of Warehouse.*

*Equipment.*

*Handling of and caring for fruit.*

*Rates.*

*The question of CHARACTER and RESPONSIBILITY is very important and we take pleasure in stating it is these very things that have made it possible for our Company to operate the largest cold storage warehouses on the Pacific Coast.*

*LOCATION of our warehouses, near the Public Markets, direct connections with all railroads; switching facilities unexcelled.*

*Combined CAPACITY of our two plants is 1,000 carloads. Both plants are EQUIPPED with all modern improvements which practice has taught us to be the best.*

*All goods are HANDLED by men who KNOW and DO IT.*

*We are everlastingly particular about the temperatures of the rooms, they being taken regularly and carefully verified.*

*Our RATES are reasonable.*

Write us about this market; we are constantly accumulating data for just this purpose. Feel free and welcome to write us about anything pertaining to the production or marketing of your fruits, and if we don't know, we will find out for you, if possible.

## Los Angeles Ice and Cold Storage Co.

Main Plant and Office, Seventh Street and Santa Fe R.R.

P. O. Box 643 Station C

LOS ANGELES, CALIFORNIA



BRANCH  
PLANT

CORNER  
FOURTH  
STREET  
AND  
CENTRAL  
AVENUE  
SOUTHERN  
PACIFIC  
TRACKS

under case 2, the hydrogen would pass out of the exhaust, whether burned or not. The carbon may be blown out with the gases, or may remain in the cylinder. Whether or not it remained in the cylinder would depend greatly on the condition of the oil film on the cylinder walls. Some oils form a thick, viscous, gummy deposit which retains the carbon formed on its surface and prevents it from being blown out through the exhaust. This gummy deposit gradually gets thicker and harder, eventually forming the hard carbon deposit so well known in cylinders. This gummy deposit is due to the action of the compounds mentioned in case 3. The free carbon liberated in case 2 is light and fluffy and of itself would not form the hard deposit. Where the compounds break up into new compounds, however, some of the new compounds are volatile, while others are heavier and more viscous than the original compound. Continued action of the kind mentioned in case 3 will therefore result in the gradual thickening of the film, and the retention and absorption by the film of the carbon that is liberated will increase this effect until, finally, a hard, brittle deposit results.

"In the absence of any gummy deposit of this kind to cement the free carbon together, the latter will generally be blown out through the exhaust. The oil that will give the best results, then, is not necessarily the one that will form the least carbon, but the one that will form the least carbon in the cylinders. Oils made from asphalt-base crudes have shown themselves to be much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are the paraffine-base Pennsylvania oils."

The loganberry growers of the Willamette Valley shipped the first carload of loganberry juice East in the month of August. Loganberry juice has become a very popular drink and has been pronounced one of the pleasantest of all fruit-juice drinks. Fifteen hundred gallons were given away by the loganberry growers of the Willamette Valley at the Panama Exposition in San Francisco. It is prophesied that when the public becomes well acquainted with loganberry juice, as they are with grape juice, that it will command a sale equal, if not greater, than grape juice.

## Store Apples

NEAR BIG MARKET

Apples stored with us take in transit rate and quick delivery to

New York, Boston  
Philadelphia

and other big eastern markets.

LOCKPORT COAL, ICE & COLD STORAGE CO.

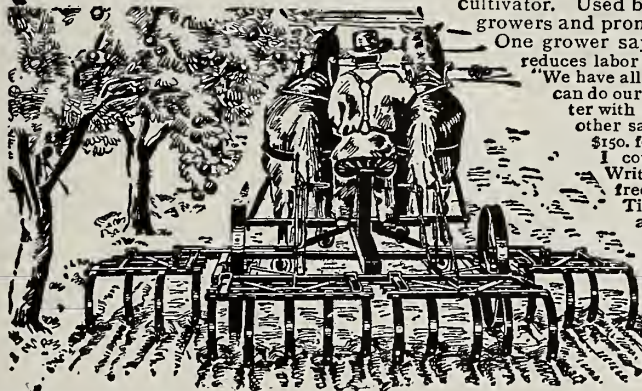
Lockport, New York



# FORKNER SPRING TOOTH TILLERS

## WORK RIGHT UP TO YOUR TREES

Cultivate entire surface between rows without disturbing boughs or fruit. Does more work—easier and quicker—and leaves better surface mulch than any other cultivator. Used by thousands of fruit growers and pronounced *indispensable*.



One grower says: "The Forkner reduces labor 40%". Another says: "We have all kinds of tools, but we can do our work quicker and better with a Forkner". Still another says: "I wouldn't take \$150. for my Forkner Tiller if I couldn't get another". Write today for catalog and free book—'Modern Soil Tillage'—invaluable to any farmer or fruit grower. Mailed free. Write today.

LIGHT DRAFT  
HARROW CO.  
601 Nevada St.  
Marshalltown, Ia.

## Western Pine Box Sales Co. 10c for Three Months

HIGH GRADE FRUIT BOXES  
APPLE, PEAR AND PEACH BOXES  
Fruit and Vegetable Crates  
GOOD SERVICE—Write us  
SPOKANE, WASH.

Trial subscription to leading fruit and garden publication. Gives timely information each month. Eighteen years old. Regular subscription rate \$1 for three years. Address

Fruitman and Gardener  
11 Main Street Mount Vernon, Iowa



LET 'ER  
BUCK at the  
ROUND-UP

PENDLETON, OREGON  
SEPT. 23-24-25, 1915  
EXCURSION FARES

Wild and Wonderful  
PONY EXPRESS RACES  
BRONCHO BUSTING  
INDIANS, COWBOYS  
OUTLAW HORSES



Furious and Exciting  
New Contestants for Glory  
Old Champions, man and  
beast, hold you spellbound  
with their nerve and daring

Get Fares and Particulars

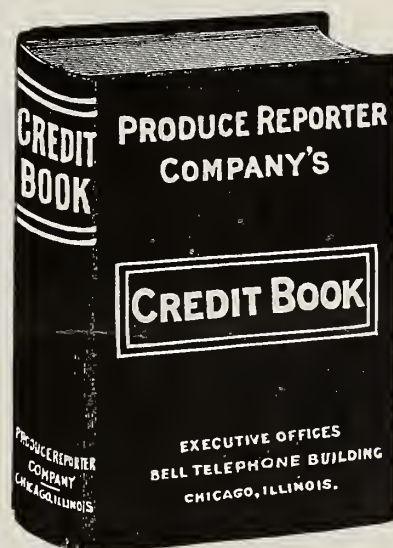
From Agent O-W. R. & N.

## To LARGE GROWERS or SMALL ASSOCIATIONS

Sell Direct to  
Distant Jobbers

BY USING THE

## "Blue Book" System



Eliminate All  
Unnecessary  
Middlemen

BUILD UP YOUR OWN  
SHIPPING BUSINESS

The **Credit Book** guides you to reliable, responsible buyers—points out the "tricky" and "unfair" dealers—gives the summarized experiences of other shippers with every firm in every market. It is used today by the great majority of successful fruit and produce handlers.

Our Inspecting and Adjusting Department looks after rejected or complained of shipments—Adjusters located in all principal markets. Collections, Litigations, Railroad Claims promptly, efficiently handled for members.

**Produce Reporter Service** operates on the correct co-operative principle for the mutual benefit and protection of members—it enables the smallest shipper to profitably compete with the largest "Distributor." It affords the only practical solution of your problem—write us today for full information—you incur no obligation whatever in doing so.

**Produce Reporter Co.**

NEW YORK CHICAGO  
Fruit Trade Building Bell Telephone Building



# BETTER FRUIT

## HOOD RIVER, OREGON

Official Organ of The Northwest Fruit Growers' Association  
A Monthly Illustrated Magazine Published in the  
Interest of Modern Fruit Growing and Marketing  
All Communications Should Be Addressed and Remittances  
Made Payable to

## Better Fruit Publishing Company

E. H. SHEPARD, Editor and Publisher

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Dr. E. D. Ball, Director and Entomologist.....Logan

### MONTANA

O. B. Whipple, Horticulturist.....Bozeman

### CALIFORNIA

C. W. Woodworth, Entomologist.....Berkeley  
W. H. Volk, Entomologist.....Watsonville  
Leon D. Batchelor, Horticulturist.....Riverside

### BRITISH COLUMBIA

R. M. Winslow, Provincial Horticulturist.....Victoria

### SUBSCRIPTION PRICE:

In the United States, \$1.00 per year in advance  
Canada and foreign, including postage, \$1.50

### ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the  
Postoffice at Hood River, Oregon, under Act  
of Congress of March 3, 1879.

**The Apple Crop of the United States, the Northwest in Particular.**—Men who are engaged in the apple business and others who are not, but who are well posted, remember the boom that existed in the Northwest a few year ago, in fact throughout the United States. The boom collapsed in 1912. Since that time there has been no extensive planting of apple trees anywhere in the United States, with the possible exception of some promotion work being done in the State of Virginia. In the meantime a large number of people have found out that much land has been planted to apples where neither good varieties or quality can be produced, therefore a large amount of this acreage is being dug up, not only throughout the Northwest but in other sections as well. The planting of 1912, in 1920, will all be in bearing, being eight years of age at that time; therefore the maximum of production could be expected in 1920. As a matter of fact it is the editor's opinion that the maximum production will be reached before that time, probably in 1918, for the reasons, as already indicated, that large acreages are being dug up that are not adapted to fruit growing and are being planted to something the district can produce to advantage. In addition to this many varieties of apples have been planted in districts where the climate or soil conditions are not suitable. For instance, Spitzenbergs have been planted quite extensively in some districts. It is now being ascertained that in a great many districts that Spitzenberg trees are susceptible to blight. This is true more particularly in warm sections, where the blight has already done an immense damage, not only to pear trees but to Spitzenbergs. Figuring on reasonable

prices for apples during the next five years or so, many are finding that in some sections they can make more money by growing alfalfa, engaging in the dairy business, raising hogs or engaging in some other line of farming than they can out of the apple business. Therefore it looks very much to the editor as if the decreasing acreage during the next two or three years will be rapid and that the maximum production will probably be reached in 1918.

**Varieties for the Northwest.**—The number of varieties of apples in which the Northwest has shown extreme superiority in all respects are comparatively few, therefore the Northwest will do well to figure out for the different locations which varieties they will be justified in retaining, and what they ought to either dig up or graft over. Among the principal varieties that look good at the present time, in accordance with their time of ripening, are: Gravenstein, King, Jonathan, Spitzenberg, Delicious, Winter Banana, Rome Beauty, Ortley, Winesap and Newtowns. In the minds of some there is some question about the future of the Jonathan, for the reason that this variety does very well in many other states in the Union. In fact it is grown in many states, whereas the other varieties named are superior in the Northwest and can be produced in only a few states in localities which are limited.

**Apple Packing House.**—Every grower who has not already a good packing house on his place should erect a shed or cover so he can keep a good quantity picked ahead, under cover, so as to keep the packers going steadily during rainy days that frequently occur during the harvesting season. A shed answering this purpose can be built at small cost. Frequently many growers who have sheds now need additional room. One of the best conveniences for this purpose and one of the cheapest is a good sized tent about 30x40 feet, which affords a splendid place in which to put the grading machine and packers, shutting off the wind and keeping out the cold and rain. These tents can be ordered from a tent manufacturer, any size you want. The price of a 30x40-foot tent, according to the ply, would cost somewhere from \$60 to \$80. The cost of lumber for the framework would probably not exceed \$10 or \$15, so for from \$75 to 100 a man can fix up a tent that will accommodate a grading machine and packers and take care of the entire day's packing after being packed, which is usually hauled away regularly each day.

The editor desires to call attention editorially to the article beginning in this issue on pruning, which will be continued during the next five or six issues of "Better Fruit." The first section appearing in this issue is devoted to "Plant Physiology as Related to Pruning," by W. M. Atwood, Depart-

ment of Botany and Plant Pathology, Experiment Station, Corvallis. The next four sections are by experts connected with the same institution, the second being a "Study of Fruit Buds," by an eminent authority, E. J. Krans. The third section is "Pruning of Young Trees," by Professor C. I. Lewis, who has a reputation as a horticulturist, scientifically and theoretically, according to Western methods, unsurpassed by any horticulturist in the United States. The fourth section is devoted to "Pruning of the Bearing Pear Tree," by Professor V. R. Gardner, who has given some of the most valuable instruction to Northwestern growers on this subject of any man who has written or talked about it. The fifth section, "Pruning the Bearing Prune Tree," is also by Professor V. R. Gardner. Each one of these articles is written in the briefest language possible and each illustrated in a very thorough and scientific way with splendid illustrations.

**Cull Apples.**—Perhaps no better advice can be given the grower in reference to cull apples, which contain scab, codling moth, San Jose scale or any pest which can be communicated, than to advise him to put them in sacks as fast as they are gathered up, tying up the end of the sacks and haul them to the vinegar factory promptly. By leaving them around such diseases or insects as they may contain remain to infest the crop next year. This is particularly true in reference to codling moth, which will crawl out and go in the cracks of the packing house, next year producing a large crop of worms to bore the crop full of holes. The editor has done this for several years. This in connection with spraying has reduced the crop of wormy and stung apples regularly each year. Proper spraying and getting rid of the cull apples promptly each year will sooner or later result in the crop being almost entirely free from many pests. During the thinning season the thinners only reported five worms and stings in the editor's orchard in a crop of about 5,000 boxes.

**The Apple Crop of the Northwest.**—Several years ago, at the National Apple Show at Spokane, some railroad officials and newspaper men in compiling statistics of the acreage made a prophesy as to the quantity of apples the Northwest would produce. It was stated at that time, as nearly as the editor remembers, five years ago, that in 1915 the apple crop of the Northwest would be 50,000 cars and in 1920 would be 150,000 cars. The editor at that time stated he did not believe the Northwest crop in 1915 would exceed 15,000 cars. 1915 is here and according to the consensus of conservative estimates it is the general opinion now that the crop will be somewhere in the neighborhood of 12,000 cars, maybe less, instead of 50,000 cars, as stated by the various railroad officials and newspaper men.



**Grading Machines.**—The experience of of the Northwest in marketing is such that we are compelled to admit that we have to put up a high-class product; varieties of apples that have quality, that are not grown extensively in the East, making our pack uniform and our grade perfect. There is no one factor that is so much help in securing uniformity of size in grading and packing as the grading and sizing machine. Several makes are on the market which have been tried out and have proved their efficiency and economy. It is the opinion of many growers that by using a good grader 5 to 10 cents per box can be saved in the packing house. When an orchard produces 2,000 boxes or over, according to the size of the crop, a grading machine can be paid for in one or two years, at the same time doing the work more efficiently and quicker. The apples will bring better prices.

**Economy in Harvesting.**—The apple growers last year either made no money or lost money, consequently they have to strive this year, as the situation looks fair for good prices, to make enough money to produce a fair average income for last year and this year. While the situation looks reasonably good for fair prices it will be necessary for the grower to endeavor to save as much as possible in every way. Already attention has been called to the grading machine as a saver, to picking receptacles and ladders. Growers should aim to secure careful pickers and good packers, paying them fair prices for the work, endeavoring to be economical as possible in every way. So much money saved is just as good as so much money made.

**Boutell Apple Paring Machinery**

Dayton Hardware & Machinery Co.  
PORTLAND, OREGON  
Write for Catalogue

**Western Commercial Fruit Evaporator Co.**

1005 Chamber of Commerce Bldg.  
Refer to our ads in the March, April, May and June numbers of "Better Fruit"

**PORTLAND WHOLESALE NURSERY COMPANY**

Rooms 6 & 7, 122½ Grand Ave., Portland, Oregon

Wholesalers of Nursery Stock and Nursery Supplies  
A very complete line of  
Fruit and Ornamental Trees, Shrubs, Vines, Etc.  
**SPECIALTIES**  
Clean Coast Grown Seedlings  
Oregon Champion Gooseberries and  
Perfection Currants

Write Now

Write Now

**WANTED!**

To hear direct from owner of good farm or unimproved land for sale.

**C. C. BUCKINGHAM**  
Houston, Texas

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

**Special Prices**

— ON —

**Mitchell Ladders**

On account of overstock we are making a reduction in prices of our Mitchell Ladders. If you will need a ladder now or next year

**Buy Now and Save Money**

Apply at the nearest Mitchell dealer, or mail in this coupon:



**Mitchell**  
LEWIS & STAYER CO.

**Mitchell's**  
TRIPOD  
FRUIT GROWERS  
LADDER

**Portland, Oregon**

Send me special prices on your Mitchell Ladders.

Name .....

P. O. ....

.....

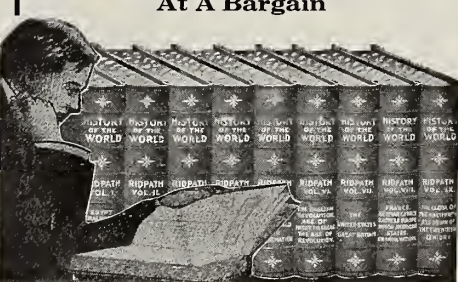
**Cider Mills**

Four sizes of the best type. Low prices

**Picking Ladders.**—It is false economy on the part of the grower to endeavor to get along with an insufficient supply of good ladders. Too frequently we see apple growers with old ladders that are rickety. Every once in a while a picker falls off the ladder with a bucket of apples, bruising half a box. Other growers, to save buying ladders allow the pickers to climb up in the trees, frequently shaking off enough apples to pay several times the cost of a good ladder. In addition to this, when a grower allows a picker to climb in a tree it is barked and more or less permanently injured.

**Apple Boxes.**—Every grower should haul out boxes according to his crop estimates, at the earliest possible moment, making them up ready for use when the harvesting season begins. Another important reason for doing this is that frequently the boxes that come from the mill are more or less wet and will not dry out knocked down, but if made up and piled in the packing house they will dry out. Apples will keep better when packed in thoroughly dry boxes than wet boxes.

**Ridpath's History of the World**  
At A Bargain



Weights 50 lbs.—2,000 Pages—4,000 Pictures  
We will name our price only in direct letters to those sending us the Coupon below. Tear off the Coupon, write name and address plainly, and mail to us now before you forget it. Dr. Ridpath is dead, his work is done, but his widow derives her support from his history, and to print our price broadcast for the sake of quickly selling these few sets would cause great injury to future sales.

**INSPECTION COUPON**

WESTERN NEWSPAPER ASSOCIATION 9-15  
Better Fruit Bureau, Hood River, Oregon  
Please mail your 46-page free sample booklet of Ridpath's History of the World, containing photographs of Napoleon, Queen Elizabeth, Socrates, Caesar and Shakespeare, and write me full particulars of your special offer to "Better Fruit" readers.

NAME .....

ADDRESS .....

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



# AWARDED GOLD MEDALS San Francisco 1915

## ZEROLENE OILS & GREASES RED CROWN GASOLINE

The Exposition jury found Zerolene first in lubricating efficiency; Red Crown, first in carbureting qualities, in purity and uniformity. A victory for Standard products made from California crudes, in competition with other gasolines and automobile oils!

**Standard Oil Company**  
(California)

OUTRIGHT SALES      QUICK RETURNS      MINIMUM COST  
**GROWERS AND SHIPPERS**

Do You Want **CASH** for Your Fruit?

Why become involved in long drawn out pools—delayed settlements—unsatisfactory returns—and unnecessary disappointments when you can obtain **EXPERT MARKETING SERVICE** at a **MINIMUM COST** with **ALL RED TAPE ELIMINATED**.

**I SPECIALIZE ON F.O.B. CASH SALES**

Write me at once if interested, specifying the number of cars and varieties of fruit you will have to market and advise very lowest prices will take loaded for shipment.

**H. E. SMITH**

Independent Marketing Agent Northwestern Fruits

Office Address  
During August, September and October  
Walla Walla, Wash.

Chicago, Ill.

Formerly Sales Manager  
North Pacific Fruit Distributors  
Payette Fruit Packing Co.

EXPERIENCED

COMPETENT

RELIABLE

**Picking Receptacles.**—Every grower should be careful about picking his apples, endeavoring to prevent all unnecessary bruising. There are several picking receptacles on the market in the way of picking buckets with canvas bottoms, and some canvas bags, which will bruise the apples less than ordinary buckets. These patent devices are also easier to empty and the emptying is done not only more rapidly but with less bruising.

**Apple Packing.**—First, secure able packers who put up an honest pack. Beware of the apple packer who packs too many boxes in one day. While some packers may exceed 100 boxes per day, under favorable conditions with a large run of sizes, a good packer taking all grades, sizes and conditions as they occur throughout the harvesting season will very seldom average much over 100 boxes, while there are many who cannot and will not average this quantity.

**Apple Harvesting.**—Apple harvesting will commence in various sections the latter part of September or the early part of October, therefore a few suggestions in the way of preparation may be of some value to the fruitgrowers who are inclined to be, frankly, just a little lax in making thorough preparation in advance of the harvesting season.

**Apple Picking.**—Don't expect your apple pickers to pick more than a reasonable number of boxes a day. Whenever a picker picks too many boxes generally he will knock off, by working rapidly and through being careless, a large number of fruit spurs, which will make the crop short next year.

Attention is again called to the article by A. Millard, Jr., which contains a wonderful fund of information, the result of a long period of thorough research work. This article began in the July issue and will be completed by December.

### Experienced Orchardist and Farmer

with several years' experience in both Hood River and Wenatchee, wishes situation as manager of an orchard or diversified farm. Best of references. Address "O," care "Better Fruit."

Do you need the services of an orchard superintendent? one who is familiar with and competent in every phase of orchard management. Am an elderly man; experienced in handling of help. Care of and marketing of fruit a specialty. Address F. W., care "Better Fruit."

### Orchard Superintendent

Unusual chance to get position as superintendent on 100-acre orchard, mostly in bearing. Must be able to take full charge and be experienced pruner especially. Good buildings. Married man preferred, with some cash. Will be expected to secure small amount of stock in the company or interest in tract. Address "Supt.," care "Better Fruit."

### WANTED

Position as Superintendent or Manager of large commercial fruit orchard by Agricultural College graduate with years of experience. Best of references. Married, one child. Address R. W. M., Wengel Apts., Madison, Wis.

### J. & H. Goodwin, Ltd. APPLE IMPORTERS

Commercial Sale Room, Deansgate,  
Manchester, England.

Floral Street, Covent Garden Market,  
London, England.

Fruit Exchange, Victoria Street  
Liverpool, England.

Humber Dock Street,  
Hull, England.

AMERICAN ADDRESSES:

97 Warren Street, New York, N. Y.  
60 State Street, Boston, Mass.

Consignments and Correspondence Solicited



Experts Talk on Vital Questions

Mr. Parlin of the Curtis Publishing Company, Philadelphia, and Mr. Boyce of the San Francisco office of that company, who are visiting the various sections of the Northwest, gave very interesting and instructive talks on "Advertising," which included much general information of a very interesting nature on many varied subjects, directly and indirectly connected with advertising.

The Cost of Living.—The statistics collected by the Curtis Publishing Company on the cost of living are extremely interesting. This report was compiled by ascertaining the expenses of 2,567 working families. The cost of living average as follows: Food, 40 per cent; rent or upkeep of home, 14 per cent; clothing, 13 per cent; fuel and light, 5 per cent; all other expenses, 21 per cent; surplus, 7 per cent. Expressed in other words, the average income of these working families was \$827, which was divided as follows: Food, \$327; rent and upkeep, \$119; clothing \$108; fuel and light, \$40; all other expenses, \$175; surplus, \$58.

The Percentage of Different Foods Consumed by the Average Family.—Mr. Parlin states that the average family spends in meat and poultry 33 per cent; dairy products, 22 per cent; vegetables, 10 per cent; flour and bread, 9 per cent; other foods, 21 per cent; fruit, 5 per cent. In other words, according to Mr. Parlin the average family of the United States spends annually \$16.35 of his income in fruits. This indicates very forcefully the necessity of the fruitgrowers doing some educational work with advertising, educating the public as to the value of fruit as a food. It is a well-known fact that the Americans are large meat eaters and eat a great deal less fruit than many other nations. Fruits are not only nutritious but wholesome, and in addition to this they assist in digestion and also assist in keeping the system in perfect order. If the public was sufficiently acquainted with the value of fruit along these lines the consumption would be wonderfully increased. It requires the right kind of educational campaign to bring about such a condition. Such a campaign should be taken up by the fruit-growers at the earliest possible opportunity.

From the Producer to the Consumer.—Mr. Parlin gave some interesting information showing the necessary changes that products must go through in order to reach the consumer. In speaking of fruit growing he named first the producer or grower, then the exchange, association or shipping concern, then the wholesale fruit jobbers in the various cities, the retailers, and eventually the consumer. Many growers have frequently expressed the idea and opinion that the fruitgrower can sell direct to the retailer. It must be admitted that fruit could be handled in this way, but on the other hand it is



# Fall Sowing

OUR TESTED GRADES OF  
**VETCH-CLOVER-GRASS**  
SEED AND COVER CROPS

have had much to do with the Agricultural Development of the Pacific Northwest. *We furnish all Seed tested for Purity and Germination.* They are Grown, Cleaned and Packed under our supervision and tested by experts. Sold by dealers in Lilly trade-marked sacks. *Send for price list.*

## Lilly's Tested Seeds



# SUGAR PRICES CUT!

100 LBS. NET 100 LBS. NET 100 LBS. NET 100 LBS. NET 100 LBS. NET

Buy at wholesale from Jones Cash Store

Again this old reliable mail order house comes to the front with a smash at high sugar prices! We handle more sugar than any other concern in the Northwest. Supply sugar for your fruit and preserving needs, at wholesale. If you have never ordered by mail from us, take this chance and get acquainted.

**Best Fruit or Berry Sugar \$6.15**  
100-Pound Sack Now for ...



**Ball-Mason Fruit Jars Reduced**  
Very best quality.  
PINTS, dozen .....50¢  
Gross \$5.50  
QUARTS, dozen .....55¢  
Gross \$6.50  
1/2 GALLONS, doz..80¢  
Gross \$9.00  
FRUIT JAR CAPS,  
dozen.....20¢  
Extra Heavy Rubbers,  
dozen .....6¢

**Other Timely Grocery Bargains**  
Harvest-time groceries and provisions of all kinds at reduced prices. Send for special grocery catalog. For instance—  
Canned Tomatoes, dozen .....89¢  
Fancy Evap. Peaches, lb..... 6¢  
4-gal. Keg of Pickles.....68¢  
Economy Coffee, lb.....15¢  
Eastern Bacon,  
pound..18¢

THIS COUPON BRINGS YOU OUR  
BIG FREE CATALOGUE NO. 63

Hundreds of pages, filled with descriptions and pictures of mail order bargains! Fill out the coupon or send your name on a postal.

**Jones Cash Store**  
Established 1882  
Front and Oak Streets  
Portland, Oregon

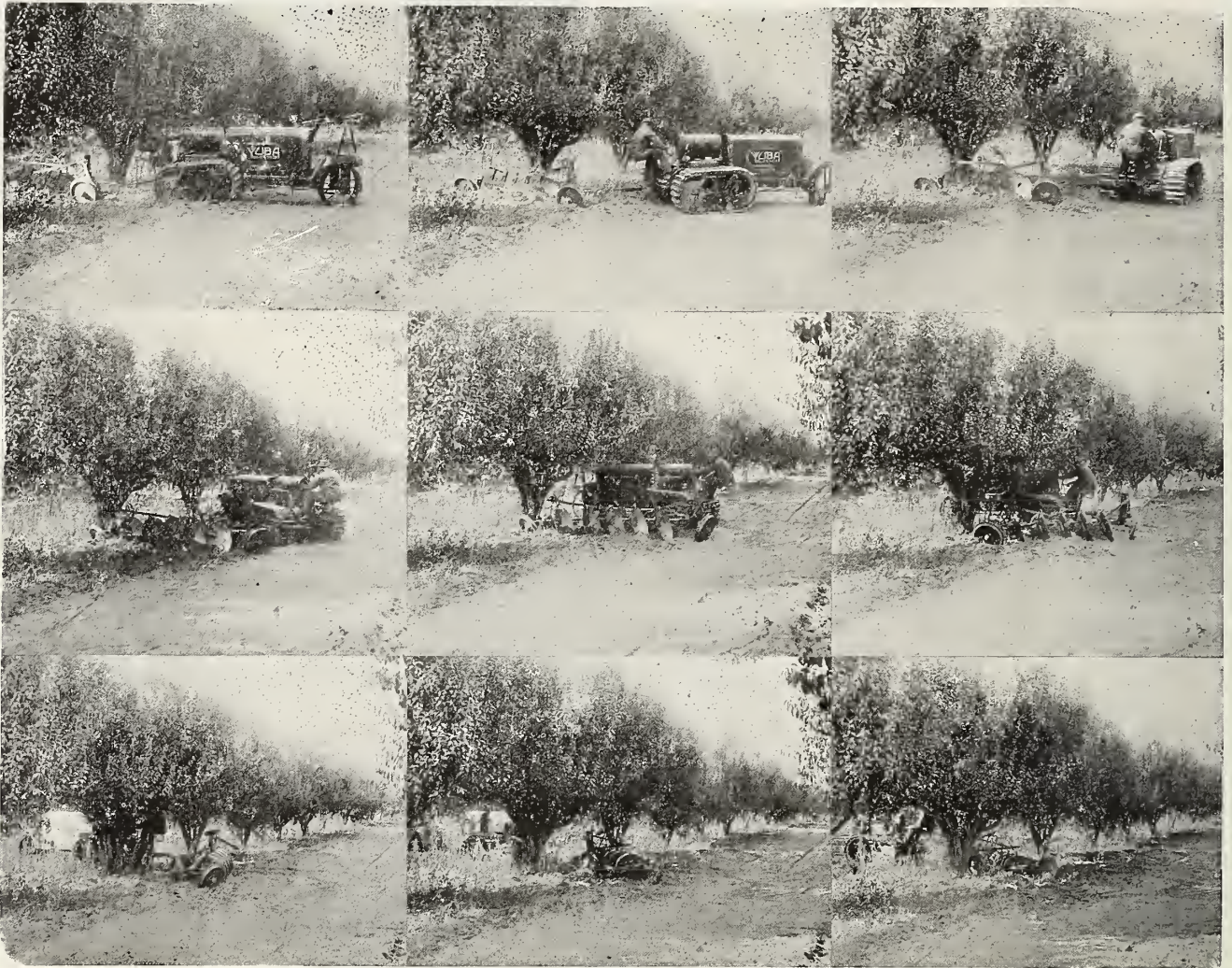
**Sign and Mail to Us N-O-W!**

I want to be shown how to buy at lower prices. Kindly mail your big Catalog No. 63 FREE to me.

NAME.....

ADDRESS.....





Yuba Ball Tread Tractor turning close to the trees in Cutter Bros.' Orchard in Brighton, Sacramento County, California

#### GETTING CLOSE

Cultivated orchards pay. The closer you succeed in bringing the cultivator to the trees, the more successful is the result.

The Yuba Ball Tread Tractors bring the cultivator close to the trees—are light enough not to pack the ground, and are compact enough not to injure the fruit-burdened branches.

#### THE ONE-MAN OUTFIT

If the cost of cultivating your orchard was reduced 50 per cent, your income would be increased by whatever amount you saved. Suppose your cultivating equipment was a one-man outfit, instead of two, would that help you to decrease your monthly expenditures? Yuba Ball Tread Tractor owners are economizing in this way. Are you?

### The Yuba Construction Company

433 CALIFORNIA STREET, SAN FRANCISCO

# THE YUBA

BALL TREAD TRACTOR

THE YUBA CONSTRUCTION CO., Dept. C  
433 California St., San Francisco

Gentlemen:

Please send me a copy of your booklet, "The Ball Tread Tractor."

Name ..... P. O. Box .....

Town ..... State .....

My orchard consists of ..... acres. The principal product is .....

known by those who have been in the business extensively that only a small quantity could be moved in this way. Under favorable circumstances and conditions, coupled with good ability for handling fruit, undoubtedly some fruitgrowers could market their fruit to advantage direct to the consumer, particularly where the quantity is small, but such a process would never take care of 20,000 cars in the Northwest in one season, or any great part thereof. One fruitgrower suggested to the editor that the Northwest could market its fruit by parcel post or ex-

press. To determine the value of such a suggestion just imagine what would have to be the size of the postoffice and the number of employees required at the shipping point like Wenatchee, Yakima, Hood River or some of the other big shipping stations, which in the height of the season would ship out all the way from ten to one hundred cars a day, or from 6,000 to 60,000 packages, each one weighing 50 pounds.

The Quantity of Business Done by the Different Kinds of Jobbers Throughout the United States.—Mr. Parlin

divided the jobber in four classifications, the national jobber, doing business all over the United States; the sectional jobber, doing business over some one section of the United States, like the South, West or East, for instance; the semi-local jobber, doing business not only in one state but in surrounding states, and the local jobber, doing business confined to his own immediate locality, which includes the city in which he is located and some surrounding territory. The percentage of business done by each class of jobbers is as follows: The national, 5 per



cent; the sectional, 9 27-100 per cent; the semi-local, 32 4-10 per cent; and the local 53 33-100 per cent. The volume of business done by the local jobber is so great that it is evident that the fruit-grower must give the local jobber the highest consideration in placing an immense quantity of fruit grown in the United States.

Retailer.—Mr. Parlin gave some interesting statistics in reference to the percentage of business done by the retailers on food commodities. The meat markets do 22 per cent of the business, while the corner groceries do 37 9-10 per cent of the business. This ought to indicate to the fruitgrower the value of co-operating with the retail grocers in marketing his product. Of course it is a well-known fact that an immense quantity of fruit is handled by the fruit stores, push carts and peddlers, which handle a large portion of the remaining 100 per cent.

Some interesting information was also given by Mr. Parlin in reference to the retail products consumed by the various sections of the United States which is of value to the fruitgrower, indicating to the fruitgrower where the greatest consumption of products takes place. The editor regrets he has not a complete list of the different states included in the following sections, therefore is able only to name in a general way these sections without giving definite boundaries: New York and part of New England, 21 per cent; Maine, 2 per cent; the Middle West, 25 per cent; the Dakotas, Nebraska and Kansas, 7 per cent; southern part of South, 7 per cent; Pennsylvania, 7 per cent; South Carolina and surrounding territory, 5½ per cent; Kentucky and surrounding territory, 4 per cent; Arkansas and surrounding territory, 5 per cent; Texas, 4½ per cent; California, 3 per cent; Colorado, New Mexico, Nevada, Wyoming, Idaho and Montana, 2 per cent; Arizona, one-half of 1 per cent; Oregon and Washington, 2 per cent. According to Mr. Parlin 22 per cent of the food products advertised is handled by the Saturday Evening Post, and 16 per cent is handled by the Ladies' Home Journal.

The Almeria grape crop of Spain is reported very much lighter and very much below normal and much less than last year.

**FRUIT GROWERS**  
**Dehydrate Your By-Products**

It gives you a high grade quick selling product at a minimum cost. It makes a clean and natural tasting product. Dehydrated fruits and vegetables have been approved by the U.S. Government, while desiccated, dried and evaporated products have been rejected. There is but one Dehydrator manufactured in the West and it is the best By-Product machine ever devised. It is adapted to the individual grower, as it can be constructed to meet any and all requirements. It is fully covered by U. S. patents. Therefore, you are protected in its use.

The manufacturers of this Dehydrator have recently patented new and improved automatic labor-saving preparatory machinery which will further reduce the present low cost for the production of this product.

For new descriptive booklet address  
**LUTHER MANUFACTURING CO.**  
San Francisco, California

# Grand Prizes

The International Jury of Awards of the Panama-Pacific International Exposition has awarded Grand Prizes for the Caterpillar Tractor and the Caterpillar Harvester. Only one Grand Prize is awarded in each class—the rating is made on the skill in invention, on the value to the world and to agriculture, and on similar points.

Send for Bulletin BE 309, which gives full information about the Caterpillar Tractor, or ask for literature on our harvester line.



**The Holt Manufacturing Co. Inc.**  
Stockton, Calif.      Peoria, Ill.  
Spokane, Wash.

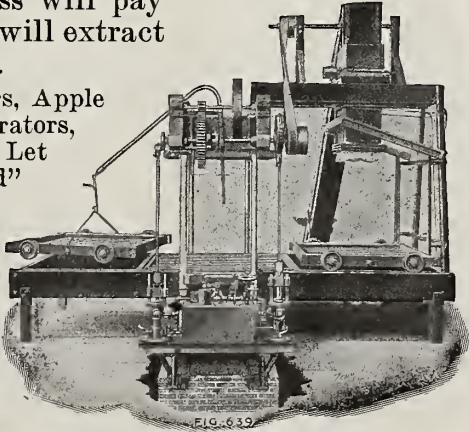


# There Are Big Profits in the Cider Business

Let us tell you how you can earn big profits making Cider, Vinegar, Apple Butter, etc., on a "Mount Gilead" Hydraulic Cider and Grape Juice Press. A "Mount Gilead" Cider and Grape Juice Press will pay for itself in the extra juice it will extract as compared to other makes.

We manufacture Evaporators, Apple Butter Cookers, Vinegar Generators, Cider and Vinegar Filters, etc. Let us tell you about "Mount Gilead" outfits and how you can put good profits in your pocket by their use.

**The Hydraulic Press Mfg. Co.**  
60 Lincoln Ave., Mt. Gilead, O.  
Pacific Coast Representatives  
**THE BERGER & CARTER CO.**  
17th and Mississippi Streets  
San Francisco, Cal.





## Don't Get Wet

and carry around a load of water and a cold.

Tower's Fish Brand

**Reflex Slicker**

**\$3.00**

sheds every drop. Easy fitting and strong at every point. *Reflex Edges* stop every drop from running in at the front.

Protector Hat, 75 cents

Satisfaction Guaranteed

Send for catalog

**A. J. TOWER CO.**

515

BOSTON



## Orchard Yarn

Progressive orchardists, those right down to the minute in methods of protecting heavy laden fruit trees, are agreed that tying branches with Orchard Yarn is the modern way of supporting orchard trees. It is not expensive, is easily done, and the time to tie is when trimming. The spurs are then tougher, less easily broken off than later, leaves are not in the way and all parts of the tree can be seen. Saving but a small percentage of trees from being broken down will pay for the expense of tying an entire orchard. One-ply Tarred Manila Yarn will run about 200 feet per pound. Two-ply will run from 90 to 100 feet per pound. Put up in 5-pound balls or on 10-pound spools. In 5-pound balls the yarn pulls from the inside and is more easily handled.

Sold by all merchants handling orchard supplies.

Manufactured by

**The Portland Cordage Company**

PORTLAND, OREGON

## Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

**Ryan & Newton Company**

SPOKANE, WASHINGTON

## Contest for Boys and Girls

The Washington State Fair, which will be held in North Yakima this year September 20 to 25, is going to make a strong appeal to the interest of the boys and girls of the state. An attractive list of premiums has been prepared in a special catalog covering different phases of agricultural displays and stock judging. Besides the regular list of premiums, several individual prizes are likewise offered. One of these is a scholarship at the Washington State College, offered through its president, E. A. Bryan, to the most successful student of any high school, or eighth-grade graduate in the stock-judging contest. As tuition at the state college is free, the prize will be accepted as an exemption to the extent of thirty dollars in room rentals or other fees. Another individual prize is offered by Dr. H. T. Graves, state commissioner of agriculture, for the best exhibit of vegetables submitted by any boy or girl in the state residing outside of Yakima County.

The scope of the children's industrial contests at the State Fair is wide and covers Home Economics, Agriculture, Manual Training, Nature Study, Educational, Floriculture, Horticulture and Livestock. So comprehensive has this department been made that the special premium list was made necessary. Rodney Ackley, a children's organizer of state-wide reputation, is the superintendend in charge, and a systematic effort is being directed toward making the department one of the interesting and educational features of the fair. The contests are open to the children of the entire state, and the premium list is scarcely equaled by any state fair in the West this year.

Seattle fruit jobbers during the month of August reported a strong demand for all kinds of fruits.

**YOU CAN EARN \$50.00 PER DAY**



with the Gearless Improved Standard Well Drilling Machine.

Drills through any formation. Five years ahead of any other. Has record of drilling 130 feet and driving casing in 9 hours.

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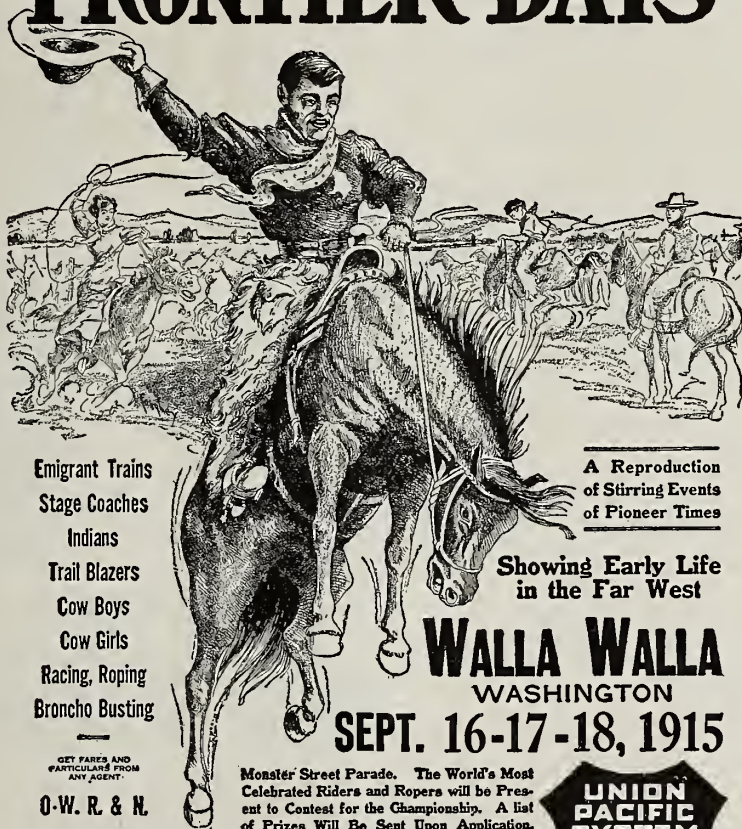
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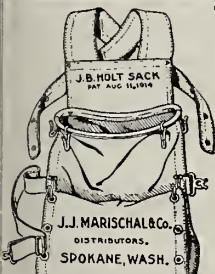
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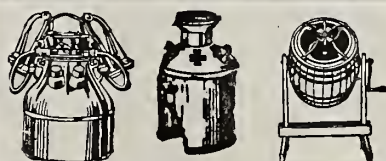
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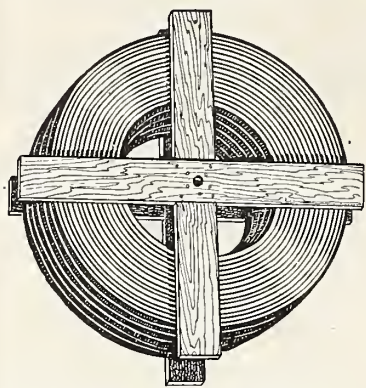
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No. 3 Duplex Strapping is made of high grade Cold Rolled Steel of considerable tensile strength and pliability. The turned edge protects the packer's hands; the knurled center prevents the nail from slipping while being driven.

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24x28-1 3/4" 2 light window  
**\$1.10**

FRONT DOORS  
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Door 2:6x6:6  
5 cross panels **\$1.10**

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## "PERFECT" Cement Coated Nails

OUR PRODUCTS ARE OF SUPERIOR QUALITY  
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PRICE and QUALITY always right.

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**FLIES WON'T BITE  
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"WOOD-LARK" FLY REPELLENT  
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IS USED. EASILY APPLIED  
SAVES TIME · TEMPER · MILK · MONEY.**

If your dealer hasn't it, send us his name, with seventy-five cents, and we will send you at once, all charges prepaid, a half-gallon package.

**WOODARD, CLARKE & CO.**

Wood-Lark Building

Portland, Oregon



The apple crop of Wenatchee is reported approximately around 80 per cent of last year. Last year, if we remember correctly, Wenatchee shipped about 5,600 cars. The crop this year is estimated variously from 4,000 to 5,000 carloads. It is also stated that one-quarter of the Wenatchee apple crop has already been contracted for by cash buyers. The Wenatchee apple crop is being marketed through various organizations, among which may be mentioned the Northwestern Fruit Exchange, the North Pacific Fruit Distributors, Wenatchee Fruit Growers' Association, E. Wagner & Sons, who have contracted a large block for Australian shipment; Wagner & Sons of Chicago, who are extensive handlers, and a number of other large fruit dealers who are extensive operators in the Wenatchee district. All told there are somewhere probably in the neighborhood of fifteen to twenty handling concerns operating in this district.



The Southern Pacific Building at the Panama Pacific International Exposition. This is 200 feet square, of Renaissance architecture. It is open daily and fruit growers are invited to visit the rest rooms, to attend the illustrated lectures and organ recitals in its theatre, and also to stroll through the Glade, where some of the noted scenes on the Southern Pacific lines are reproduced in pleasing effect.

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FALL SOWING

"Diamond Quality"

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VETCHES—GRAINS  
GRASSES and FIELD  
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MIXTURES for DRY LAND—  
WET LAND—BURNS—Permanent  
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**PEARSON**  
**E**CONOMY in buying is getting the best value for the money, not always in getting the lowest prices. PEARSON prices are right.  
**A**DHESIVENESS or holding power is the reason for PEARSON nails. For twenty years they have been making boxes strong. Now, more than ever.  
**R**ELIABILITY behind the goods is added value. You can rely on our record of fulfillment of every contract and fair adjustment of every claim.  
**S**ATISFACTION is assured by our long experience in making nails to suit our customers' needs. We know what you want; we guarantee satisfaction.  
**O**RIGINALITY plus experience always excels imitation. Imitation's highest hope is, to sometime (not now) equal Pearson—meantime you play safe.  
**N A I L S**

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**A Central Selling Agency for Yakima**

EXCLUSIVE DISTRIBUTORS FOR

**Yakima County Horticultural Union  
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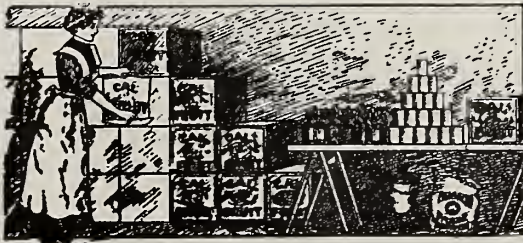
Our organizations handled 2,500 carloads of Yakima Fruit last season. Hundreds of growers have joined our movement and we already have under contract a much larger proportion of Yakima tonnage than ever before. Additional tonnage is coming to us daily. We have a large proportion of the fruit in the early districts—therefore we can load the early assorted cars—money-makers for the trade and the growers.

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## Paste for Labeling—"Palo Alto" Paste Powder



added to cold water, instantly makes a beautiful, smooth, white paste. Ready for immediate use at a cost of 10 cents a gallon. No labor. No muss. No spoiled paste.

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# CUT THE COST OF PACKING

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## PRACTICAL BOX MARKER

Puts on the five stamps at one operation.  
Write for information.

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### HOOD RIVER APPLE VINEGAR CO.

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#### YELLOW NEWTON VINEGAR AND SWEET CIDER EVAPORATED APPLES

Made from Choice Hood River Apples

If your jobber cannot supply you  
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is interested in the manifold uses of  
cement-concrete on the farm.

#### Practical Cement Work

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is a cloth bound book of 112 pages, giving  
valuable information on the mixing and  
placing concrete in the various forms of  
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Extensive growers of all lines of Fruit, Nut and Shade Trees, Evergreens,  
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FRANQUETTE walnut, recognized as the best walnut. Our large  
complete stock consists of varieties suitable for every kind of climate.  
Write us about your wants before buying.

## Pears—Cherries—Prunes

in leading varieties. This stock is especially fine this year; can't be beat; is free from disease and in fact, you can't wish for anything better. Also berries, roses, ornamentals, etc. Catalog on request.

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Plantation four miles southwest of station, Belmont Road

We will be pleased to show you trees, apple trees that have a heritage, a quality that should be considered by everyone who plants a tree. Our trees are grown in clean hillside virgin red shot soil with clay subsoil, producing the most vigorous root system. Our buds are selected from the best bearing healthy Hood River trees that make the Hood River apple famous throughout the world. Our trees will give you satisfactory results in vigor, fruit and quality. Ask for catalog. We guarantee our products. Apples, pears, peaches, apricots, almonds and walnuts. A complete line of the best varieties of all kinds of fruits.

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Established 1900

## Butler Banking Company

HOOD RIVER, OREGON

Capital . . . . . \$100,000.00

4% Interest Paid in our Savings Department

WE GIVE SPECIAL ATTENTION TO GOOD FARM LOANS

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

## Apple as a Farm Product, Etc.

Continued from page 10

tion. The banana trade is even more recent and the grapefruit most recent of all. Florida grapefruit alone increased from 117,336 boxes in 1900 to 1,611,537 boxes in 1910, about 900 per cent. (See Table VI.) Our population is increasing rapidly, and more and more fruit per capita seems to be eaten. This gives room for increase in all agricultural production, but the fruit production has been generally over-emphasized, and a man will either eat an orange, a grapefruit or an apple for breakfast; he won't eat them all, or if he were able to perform this feat the growers of each respective fruit would all clamor to have him eat three of their particular kind.

The apple has certain advantages; some of these have already been mentioned. The apple has always been and is the leading fruit of this country, and this is worth something; but the rapid public appreciation of the citrus fruits in the past generation has shown this advantage is not necessarily permanent. The apple can be consumed in more conditions than can any other fruit. The apple has more to fall back on in the way of by-products than any other of our orchard fruits, in spite of the "essential oils" of the citrus industry. Probably more than any other advantage found in the apple will be the possibility of lower cost of production of this fruit, compared to others, and its greater ability, compared to some, to find outlet in the lower levels of ultimate consumers.

Under chapter three we have discussed the markets of this country, applying the question to farm products generally, and as regards the domestic markets, apples fit in with this discussion with only slight qualifications. Apples are so universally produced for home use by farmers that the farms and small villages, and even many outlying towns are practically marked off the map of demand for the fruit that is not produced in that immediate locality. This differs apple from orange distribution, for instance. Further, Eastern apple states can hardly expect to market apples in other Eastern apple states, except in the larger cities, and even there they are at a strong disadvantage. The whole market question is thus to some degree localized on a large scale. Western apples are an exception to this, and have proven their ability to sell on their appearance beside less expensive and often quite as good quality locally-produced fruit. The writer has observed Pacific Coast apples attracting attention on fruit stands in Rochester, New York, the center of perhaps the greatest apple region in the world.

(To be continued)

The percentage of apples exported from the United States is variously estimated at from 3 to 5 per cent, while the percentage of Northwestern apples exported is estimated at approximately around 10 per cent, varying in different years,—usually less.



## Controlling the Apple-Borer

"Worming" and painting the trunks of the trees are recommended to owners of apple orchards as efficient methods of dealing with the roundheaded apple-tree borer, in a new Farmers' Bulletin, No. 675, of the United States Department of Agriculture. A heavy application of some paint that will not injure the trees but will remain in an unbroken coat on the bark for two or three months, is effective in preventing the female from laying her eggs in the tree, and greatly reduces the amount of worming, or the removal of the insects with a knife and wire, that must be done.

The roundheaded apple-tree borer, the most destructive of a number of similar pests, lays its eggs in or under the bark and wood to such an extent that the tree is seriously weakened or killed. The pest is found over the whole of the eastern portion of the United States and as far west as Nebraska, Kansas and New Mexico. In addition to fruit trees, it feeds on service, wild crab and mountain ash trees, which makes it advisable for orchardists to remove these varieties for a distance of at least one hundred yards from their orchards.

The female lays her eggs, one at a time, in an incision she has made in the bark, usually just above the surface of the ground. About 15 or 20 days later the eggs hatch and the larvae appear. When full grown these are nearly an inch and a half in length. They first attack the inner bark, eating out broad, more or less circular galleries and thrusting out through small holes and the insect pulled out. If made in the bark castings which form little heaps of reddish wood fragments around the base of the tree. During the winter the borers are quiescent, but early in the following spring they attack the solid wood, while some of them work their way up the trunk. These last spend one more winter in the tree and then having passed through the pupae stage, dig their way out and emerge as adult beetles. Three years are required for the insect to complete its development from egg to adult.

Ordinarily, the beetle lives about 40 or 50 days. It is about three-fourths of an inch in length, light brown in color above, with two broad white bands, joined in front, extending the full length of the back; the underparts and front of the head are white. The females rarely fly any considerable distance, so that if the immediate vicinity of an orchard can be kept free from them, there is little danger of a serious infestation.

The most common method of ridding an orchard of these pests is to cut away the bark sufficiently to trace the burrows made by the borer. A hooked wire is then inserted into the burrow with care, the wound in the tree caused by this process will heal readily. The castings at the base of the tree serve as an indication of the presence of the borers. Where the burrows are curved

## Vertical Farming PROVED

BY

Effects of  
Orchard  
Blasting

with

**DU PONT**

**RED CROSS  
FARM POWDER**

These cuts are made from photos  
showing comparative growth of pear  
trees from Spring of 1913  
to Aug. 1, 1914, Bellemont  
Orchards, Inc., Norfolk, Va.



IN DUG HOLE

IN BLASTED GROUND

**A**LL progressive farmers and orchardists know that trees planted in blasted ground grow much faster than those planted in the old way and bear fruit earlier.

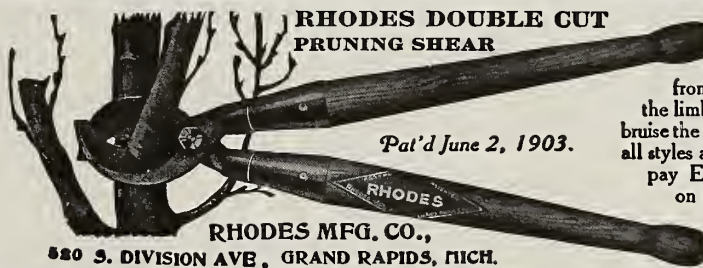
This proves the truth of the principles of Vertical Farming, which aims to cultivate downward as well as to till the top soil.

Three years ago tree planting in blasted holes was experimental—now millions of trees are set out by the Vertical Farming method every spring and fall.

In like manner, blasting the subsoil to increase general crop yields, now regarded as experimental, will in a few years, be common.

To learn how and why Vertical Farming may double the yields of your farm, get the **Free Reading Course** in Vertical Farming, by Dr. G. E. Bailey, one of the best works on soils and soil culture ever published. Sent free with every request for our Farmer's Handbook N. F-338. Write now.

Established 1802 **DU PONT POWDER CO.**, Wilmington, Delaware



**RHODES DOUBLE CUT  
PRUNING SHEAR**

Pat'd June 2, 1903.

**RHODES MFG. CO.,**

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**THE** only  
pruner  
made that cuts  
from both sides of  
the limb and does not  
bruise the bark. Made in  
all styles and sizes. We  
pay Express charges  
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Write for  
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Band Concerts, Free and Paid Attrac-  
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COME AND ENJOY YOURSELVES

Reduced Rates on all Lines. Special invitation to automobile tourists.

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(Soil Bacteria)

Will maintain your soil fertility, help produce larger crops, larger fruit and through a cover crop will produce more humus than you can get otherwise, at the smallest expense.

Let us tell you—write for literature (without cost)

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Branch Office for Northwest  
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244 So. Central Ave., Los Angeles, Cal.

or obstructed in some way, so that the wire cannot be inserted, cotton batting dipped in carbon bisulphid should be inserted, and the hole then plugged with moist earth. The gas from the carbon bisulphid will penetrate all parts of the burrow and kill the borer.

In addition to worming, as this process is called, paint is often used to prevent the beetles laying their eggs. Pure white lead and raw linseed oil, mixed rather thick, will not injure the trees, and when applied to young, smooth bark, will form a protective coat during the egg-laying season. It is probable that this is a more effective method than wrapping the trees with building paper, cotton batting, cloth or other materials sometimes used for this purpose. Before painting, however, the earth should be removed from the base of the tree for a depth of from three to four inches. The surface of the trunk thus exposed should be first scraped and painted and the earth then replaced. This is necessary, for the beetle occasionally lays her eggs under instead of above the ground.

## The Auction Market

By Arthur M. Geary, Portland, Oregon.

"If apples of the Pacific Northwest were stored carefully until each variety reached its prime, and then were sold through the auctions of the large Eastern cities, would there not be much wider and quicker distribution at less expense, with greater returns to the growers than under the present method of dealing entirely through the large receiving apple jobbers?" This was the question that I asked a well-known apple jobber of Chicago a month ago. His answer was: "Yes, but we apple jobbers are not going to promote the system that puts the small jobber and broker on the same level with us who have outlets through our stores. We are not afraid of the shippers handling the apples in this way themselves, because the growers are in such a sad financial condition that they could not wait for the returns."

The fact that the growers cannot afford to hold their apples from October to February, March, or whenever they should properly be eaten, is the great obstacle in the way of the Northwestern apple growers deriving the same benefit that the Florida Citrus Exchange and the California Fruit Distributors and California Fruit Growers Exchange obtain from selling their products exclusively at public sale in the large auction centers of the United States and Canada. The big receiving jobber must compete with the little jobber at the auctions, under the auction system. But under the private sales method the little jobber purchases from the big jobber. The consumer buys less at a greater price.

As a prominent marketman in Cincinnati told me: "A buyer abhors to pay profit to another." That is the reason that hundreds of jobbing firms in the United States do not deal in box apples. That is the reason that the consumption



WINANS' PATENT

## FIRST AID TO FRUIT TREES

Winans' Net Tree Support

Prevents fruit-laden trees from breaking, holding the limbs up more efficiently and at much less expense than propping. Holds limbs in place, preventing damage and dropping when the wind blows. Meshes are large enough so fruit can be picked through them—open at bottom so picker can get inside the net, or net can be removed at picking time.

This net of finer mesh will keep the birds from eating the blossoms or fruit in districts which are thus troubled.

For further particulars, descriptive circulars and price lists, write

W. ROSS WINANS, Hood River, Ore.



## The Law of Gravity

is no more final in its results than is the spirit of economy in making for wealth. Just as sure as the apple falls downward when shaken from the tree, do your savings climb upward when drawing interest in this strong state bank. If it is not your good fortune to get money today, remember, when you do have it, the experience acquired at the time you were without it. A little reflection at such a time should bring you here with your savings.

Attractive Interest Paid on Savings  
Accounts and Time Deposits

## Ladd & Tilton Bank

Oldest in the Northwest  
PORTLAND, ORE.

# The First National Bank

Hood River, Oregon

Capital and Surplus  
\$135,000

4% Interest Paid on Savings  
and Term Deposits

F. S. STANLEY, President  
E. O. BLANCHARD, Cashier



of fruit sold at auction is increasing at the expense of the demand for box apples.

It is because the sales managers of the different associations and companies of the Northwest realize that the demand for the box apple must be increased that they listen attentively to the arguments in favor of the systematic use of the great public clearing houses for fruit that have been established by the auction companies. Many of the growers appear to be under the delusion that because they are producing a package of great merit the demand and price should be satisfactory.

In order to sell, the box apple must have salesmen. Is it not better to have hundreds of salesmen who get their supplies on an equal basis from the auction, than to have a fewer number who must buy from their larger rivals?

There is great advertising value to be gained from placing a high-class package before all the trade of the city each morning. A prominent official of the California Fruit Growers' Exchange told me in New York: "There is no doubt among the California Exchange officials but that auction selling forces consumption."

My investigations in different cities sustain the belief that the apple growers, as the volume of apples produced in the Northwest increases, will find it necessary and highly profitable to follow in the footsteps of the shippers of California and Florida. The outlets controlled by the apple jobbers at present are too small. The great problem for the apple growers to solve is, "How to Finance their Business?" When that is solved, they can use the auction to advantage.

According to the figures given me by the Boston Produce Exchange, ten more cars of Northwestern apples were consumed in Boston five years ago than during the year closing with June 1, 1915. On the other hand, the reports of the California Fruit Distributors, the California Fruit Growers' Exchange, and the Florida Citrus Exchange show that during the same period there has been a tremendous increase in the consumption of the fruits sold at auction in Boston.

There are over 1,200 cut rate stores in Philadelphia, as well as great numbers in Pittsburgh and other cities. These stores that are endeavoring to reduce the cost of living by avoiding paying unnecessary profits to the middlemen, feature the fruit that they can buy direct from the auction.

In New York last fall, inability to find an outlet for inferior Jonathans that glutted the market sent apple prices to rock bottom. Until late in the spring the apple market did not recover from the depression caused by the Jonathans. If all of these had been fed into the auctions, hundreds of peddlers and small jobbers would have aided in their distribution. New York people would have taken to eating apples. The rate of consumption established would have resulted in the rebound of prices. These Jonathan apples, instead, were disposed of through the slow and tedious method

# "BLUE RIBBON"

(EXTRA FANCY)

# "RED RIBBON"

(FANCY)

## Quality Brands of Yakima Fruits

We specialize in mixed cars of

## BERRIES AND CHERRIES

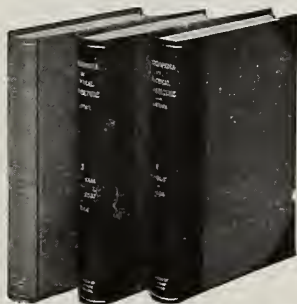
and will also have straight and mixed cars of the earliest Apricots, Prunes, Pears and Peaches grown in the Yakima Valley.

Write or wire for information.

## Yakima County Horticultural Union

FRED EBERLE, Manager

NORTH YAKIMA, WASHINGTON



## ENCYCLOPEDIA OF JUST OFF THE PRESS PRACTICAL HORTICULTURE

The only complete, thorough manual of fruit growing published—covering every feature—planting, pruning, cultivating, spraying, diseases, harvesting, etc., as used and approved by Northwest fruit growers. Contains valuable statistics. All reading matter arranged conveniently for reference and indexed.

It tells how to do the things that every fruit grower must do who is growing fruit as a business.

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Write for circulars containing full descriptive matter and prices.

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North Yakima, Wash.

# D. Crossley & Sons

ESTABLISHED 1878

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CALIFORNIA, OREGON, WASHINGTON, IDAHO AND  
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

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**Mr. Planter!**DID YOU KNOW  
THAT A**Genuine  
Vrooman Strain  
Franquette  
Walnut Tree**

will come into bearing as early as three or four years after planting?

And that there are many instances of four and five-year-old trees (after planting) producing close to a bushel of nuts?

And that there are thirty-two (32) pounds to the bushel?

And that from 22c to 25c per pound is an average market?

And that Oregon soil and climate make for perfection in treegrowing?

And that every order is backed by 30 years' experience in growing, packing and shipping?

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CLOTHES****MANHATTAN SHIRTS****JOHN B. STETSON HATS****NEMO CORSETS****Strictly Cash—One Price to All****True-to-Name Nursery****GALLIGAN BROS.  
Proprietors****HOOD RIVER, OREGON DUFUR, OREGON**

Growers of high grade nursery stock, guaranteed true-to-name. Breeders and importers of purebred Big Type Poland-China Hogs. Service boars, bred gilts and weaning pigs for sale.

For catalog of nursery stock and prices on swine, write

**True-to-Name Nursery****HOOD RIVER, OREGON**

of private selling from the jobbing stores. Many of the packages were in an unfit condition when finally offered the consumer.

Jobbers buy to supply existing wants. They do not create new demands. A selling agent for one of the large Northwestern shipping associations in an Eastern city told me that he had been forbidden to supply orders of apples to a string of tea stores by a jobber who furnished one of the main outlets for apples in that particular city. The agents of the California and Florida associations are not so handicapped. They send out market letters the day before each auction sale to large retailers as well as to jobbers.

**Protection of Dried Fruit**

Recent investigations have shown that the loss to the dried-fruit industry from the attacks of insects is sufficiently great to make it nearly as desirable to put up the fruit in sealed packages as it is in the case of cereals. No exact figures are available as to the extent of the loss, because the injury is usually noticed for the first time by the retailer or consumer, after the product has been widely distributed. The retailer, moreover, is inclined to be reticent about the amount of damaged fruit in his possession, and unless the damage is considerable, prefers to stand the loss rather than return it to the wholesaler. The total damage, however, is unquestionably considerable.

The two insects that do most of the harm are the Indian-meal moth and the dried-fruit beetle. An investigation carried on in California by the Department of Agriculture has shown that the fruit may become infested with these insects in the field, in the packing house, in the warehouse and in the grocery store. Adequate protection against such infestation, therefore, must consist, first, in the sterilization of the fruit before it is packed, and secondly, in the use of cartons through which the insect cannot penetrate.

Dried fruit is usually processed in some manner before being packed, in order to make its appearance more attractive. Figs, for example, are frequently dipped in boiling brine, and this, in itself, is sufficient to destroy all insect life. Other fruits, however, such as the peach, are dipped in cold or lukewarm water. In such cases the addition of a belt heater is suggested as an effective means of destroying insects. By running fruits in a series of belts through a chamber the temperature of which is maintained at 180 degrees Fahrenheit, satisfactory sterilization can be secured. By adjusting the speed of the belt, the time that the fruit remains in the heater can, of course, be easily regulated. The heater should be so arranged that the fruit is delivered into a screened packing room, which will insure it against contamination before packing.

The greatest part of the infestation, however, occurs after packing, and, in consequence, the sterilization of the

**Fruitgrowers  
Attention**

Do you want to increase your earnings? Do you want a side line that will bring you a steady income? If so, invest in a few good cows and sows. They will provide a steady source of income and increase your bank account. Remember the old saying, "Prosperity follows the cow;" the same is true of the sow. If you are interested, be prepared to attend my auction sale of

**Jersey Cattle**

AND

**Duroc-Jersey Hogs**

AT

**Rickreall, Oregon**

ON

**September 8th, 1915**

I am offering some of the best animals in my herd; Register of Merit cows with records of over 400 lbs. of butter with first calf; also some choice heifers and all kinds of red hogs—big, healthy, prolific hogs. All stock, both cattle and hogs, registered. Send for Catalog.

**C. N. McARTHUR**

Yeon Building

PORTLAND, OREGON

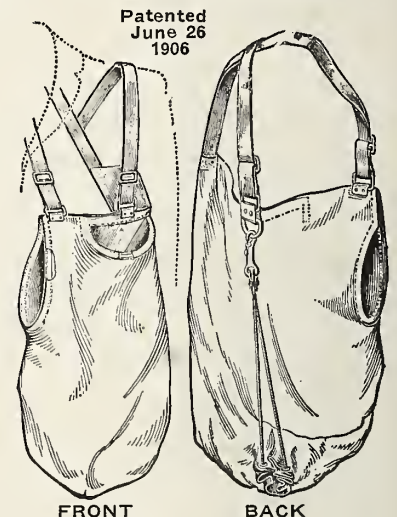
**Home Canners  
ALL SIZES**

Used by U. S. Government Schools, Girls' Clubs, Collaborators and Farmers everywhere. For Catalog and Special Offer, write

**Royal Home Canner Co.**

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Albion, Illinois



FRONT

BACK

**Ideal Fruit Picking Bag**

Made of heavy-weight duck and so arranged as to equalize the load on both shoulders.

The openings are arranged so both hands can be used in picking, and the drawstring is arranged so the fruit can be let out at the bottom in emptying the bag.

The bag can be let down to the bottom of the box before opening the drawstring, thus not bruising the fruit.

This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince even the most skeptical.

SAMPLE, POSTPAID, \$1.00

AGENTS WANTED

**BARKER MANUFACTURING CO.**

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HONEOYE FALLS, N. Y.



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by giving him THE BOYS' MAGAZINE. You could not give him a greater pleasure or a stronger influence for good. Each issue of this splendid magazine is filled with clean, fascinating stories and instructive articles, all of intense interest to every live boy. Also, each issue contains departments devoted to Electricity, Mechanics, Athletics, Photography, Carpentry, Stamps and Coins. A new, handsome cover in colors each month. Beautifully illustrated throughout, both in black and white and in colors.

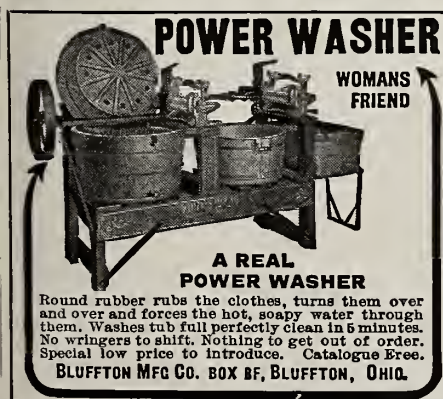
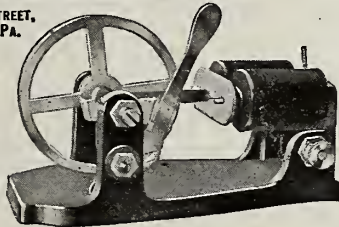
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cartons is of great importance. These should be sealed after having been filled and before they are placed in the warehouses or cars. In this way the fruit is not only protected against infestation, but is preserved for long periods in the condition in which it was packed. Fibre-board packages have been found satisfactory containers for the fruit, and sealing can be done in several ways. Machines have been invented, for example, which will rapidly seal small packages of dried fruit and at a moderate cost. One machine designed to wrap cartons 8x3x3 inches, will wrap and seal a minimum of 10,000 a day, at an estimated cost, including all material and the wages of the operator, of less than \$1.00 a thousand. When the output is increased to from 15,000 to 20,000 cartons a day, the cost will be from 80 to 90 cents a thousand. At this rate it is estimated that the machine will pay for itself in a comparatively short space of time, and that the manufacturer will be able to deliver a sealed product which is practically safe from all danger of infestation. Further details in regard to this subject are contained in Bulletin No. 235 of the U. S. Department of Agriculture, "The Control of Dried-Fruit Insects in California."—U. S. Department of Agriculture Bulletin.

### Agricultural and Horticultural Association of Kelowna

Kelowna has for several years past held very successful agricultural and horticultural exhibitions organized by this association (previously known as the Okanogan Mission Trades and Agricultural Association). Being in the heart of the Okanogan, the district from which comes the finest agricultural products of the province, and Kelowna fruit, particularly apples, having proved its pre-eminence in competition with fruit from all parts of the North American continent, it will easily be understood that it has been possible to get together very creditable exhibitions, which have attracted large numbers of visitors. The 1915 show is to be held September 27 to 29, and will be much on the lines of the show held last year. The directors feel that this year the firms from whom the people of the district have been obtaining the greater part of their many requirements should be given an opportunity of showing their interest in what is the principal event in the Kelowna calendar, by donating special prizes for the show. Such prizes, particularly if offered for exhibits in some way, if only remotely, related to the business of the firm donating, would add very materially to the attractions of the show, both from an exhibitor's and a visitor's viewpoint, and would naturally draw the attention of the general public to the name of the firm in a way to ensure a very friendly feeling toward that firm. The directors will be grateful for any contribution you care to make to the prize list, and will carry out any reasonable conditions imposed in connection with special prizes donated. I shall be

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### Made Like Finest Auto Springs

Highest grade steel. Very resilient and durable. All sizes—fit any wagon up to 5 tons capacity. If not at dealer's, write for circular showing how Harvey Springs save money.

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## KEES FRUIT PICKER

Gathers Apples, Peaches, etc., as carefully as by hand with less work. Saves climbing ladder. No fruit out of reach. No wire to injure fruit or tangle in branches. Fruit drops into cloth bag, which can be filled before lowering. Ask your hardware dealer or send to us.

Price complete, except long handle (a fish pole will do), \$50, postage paid. Your money back if not O. K. Circular sent on request.

F. D. KEES MFG. CO., Beatrice, Neb.  
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IT GETS THE FRUIT THAT'S HARD TO REACH





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**W**HAT after all is more worth while than bringing comfort and safety into the home? Think what the telephone has done to tie the country house to the town and the town to the city. Don't be isolated. Get into touch with the voice of the big outside world. Know the prices that rule on farm products. Know about the party at your neighbor's house. Bring to your whole family the safety that comes with the knowledge that in the time of illness or fire the whole community is within call.

## Kellogg Telephones

have won their way into homes all over America because of the quality of service they give. Did you know there is a big difference in telephones? There is. Kellogg phones have to undergo an inspection more rigid than other makes. They pass through 37 distinct tests before they leave the factory. That means dollars and cents to you.

As a matter of fact, it is not uncommon for the repairs to cheaper telephones to cost in a few years more than the first cost. Kellogg instruments go on year after year carrying the most delicate sounds perfectly without repairs.

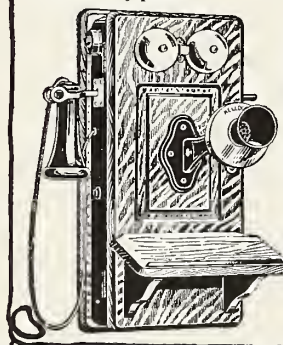
Kellogg Transmitter is guaranteed for five years. A Kellogg lightning protector goes with every phone.

Every part of the instrument is strong, simple and durable. Big, powerful generator that will ring efficiently with 40 telephones on the line. Unbreakable receiver and transmitter mouth-piece. Long life batteries. Secret service push button to ring "Central" without ringing your neighbors.

Let us help you in planning your line. We can tell you how to avoid mistakes and save money. Our expert help costs you nothing.

Literature and bulletins giving the latest ideas about telephone construction sent free.

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# Chicago St. Paul Minneapolis

## Two Through Trains Daily

Both having Observation Cars, Standard and Tourist Sleeping Cars, Coaches, Dining Cars.

To St. Louis, one train daily from Pacific Northwest.

# Northern Pacific Ry.

"The Great Big Baked Potato Route"

## Excursion Fares

Much lower than regular fares, to all points in Eastern and Middle Western States, and to Canada.

Extra stopover allowed on all tickets for visit to

## Yellowstone Park

Season to September 15

Tickets, Information, 255 Morrison St.

Main 244 — Phones — A 1244

Call on or write to

A. D. CHARLTON, A. G. P. A., Portland



pleased to send you copy of the prize list and any other information you may wish, on being favored with a reply. Thanking you in anticipation of your kind consideration of this application, I am, gentlemen, yours faithfully, P. B. Sudshall, Secretary.

## Annual Cover Crops

The annual cover crops should be sown some time during the early part of September. Many people have already planted vetch, some have planted rye or oats in the orchard, and these crops will be up and growing well before the fruit is gathered from the orchard. Early planting is especially valuable in many regions. In regions where winter injury has been common, the planting of some form of cover crops close to the trees in time to make sufficient growth to remove the surplus water from the soil and cause the trees to go into winter quarters without any soft or unripened wood is sure to produce beneficial and helpful results.

Rye is a good crop for this, if sown early. Winter vetch is also a good crop, but has the objection of being very expensive. When once seeded, however, it can be grown as an annual cover crop for several years, if it is let grow in the spring until mid-spring or early summer, when it will have developed seed that will remain practically dormant all summer and start into growth in early fall.

The planting of permanent cover crops, such as clover and alfalfa, should be thoroughly considered before it is undertaken. These crops require that the water supply be sufficient for growing both the orchard crop and the cover crop at the same time. Clover can be grown for one year and then turned under with very beneficial results. Alfalfa can be grown for one or two years and then the surface soil thoroughly disked and worked up until it looks like a plowed field, and in that way a great deal of vegetation that falls on the surface can be worked into the surface soil. Alfalfa is difficult to eradicate and should not be planted until all of its characteristics have been thoroughly considered by the orchard owner. Most orchardists who have planted alfalfa and clover consider clover less valuable and favor alfalfa more and more every year. — O. M. Morris, Horticulturist, Washington Experiment Station.

## Canning Demonstration Car on S. P. R. R. Lines

A demonstration car for teaching farmers and others interested the new process of canning by the steam pressure method, is now in operation over the Southern Pacific lines in the Willamette Valley. The tour was arranged by Professor D. Hetzel, director of Extension at Oregon Agricultural College, and H. M. Hinshaw, general freight agent of the Southern Pacific lines. The car is in charge of F. L. Griffin, state leader of industrial club work for girls and boys.

It is the purpose of the demonstration to enable producers of fruits and vege-



tables to utilize their surplus products by canning, for use either for home consumption or for commercial purposes. A few of the leading types of home canners will be shown, with which fruits and vegetables can be converted into by-products within a few minutes time. Steam pressure raises the temperature in a short time to a degree of heat that is fatal to germs and their more resistant spores, so that when sealed the products will keep for a long time. The cost is shown to be so low that a good profit is made on the work and a supply of home-canned fruits and vegetables and fruit juices can be secured from the home garden and orchard.

**The Growing Popularity of the Bushel Shipping Basket**

Some fifty factories in the United States make the bushel shipping baskets which are being so extensively used all over the United States for peaches and other large fruits. The popularity of these baskets as a fruit package has been growing from year to year to such an extent that with a good fruit crop generally it taxes the capacity of the factories to supply the baskets. In the East, West, North and South the majority of these factories have sold their entire output this year up to August 15. The approximate production of these baskets in all the factories in the United States amounts to 200,000 baskets per day, three million a month. From this, it can be readily figured that nearly thirty million bushel fruit shipping baskets will be used this year in the United States.

The fruit grower and shipper is usually slow to experiment with a new package, therefore, the use of such enormous quantities of these bushel shipping baskets proves conclusively that it is the cheapest, most practical and best package that can be used for peaches, pears and many others of the larger fruits and vegetables. The price of a basket with round hoop, slatted cover and center post complete at the factory runs from 10 cents to 12 cents apiece. There is no other package of equal size, strength and utility that can be sold at that price. The bushel basket package is ready to ship when the fruit is ripe; no nailing or other preparation is required; it's handy and convenient to handle and last but not least worth really more than first cost to anyone having use for a basket after it has delivered the contents. These are only a few points that have made this package so popular.

**The Pear Leaf Blister Mite**

The pear leaf blister mite is a very common pest in many districts. It causes the leaves to blacken in spots where the mite is present. These blackened spots represent galls or swellings of the leaf tissue in the center of which the mite resides. When first forming these galls are blister-like and reddish in color. While mainly abundant on pear, the blister mite also may attack the apple, in which case the galls are



**International Harvester Wagons—Weber—Columbus**

**T**HERE are a few points about the new **Columbus** and **Weber** wagons that every farmer ought to know. These points make the difference between **Columbus** and **Weber** wagons and others—a difference that means a good deal to you.

The fifth wheel, that prevents the pulling up and pitching of the bolster, makes it easier for your team to pull a **Columbus** or **Weber** wagon and does away with bent and broken king pins and circle irons. The patent folding endgate and the link end rods save much of your time in the busy season. The high-grade wood, iron, steel and paint used add years to the life of **Columbus** and **Weber** wagons. These things mean economy.

These points are explained in detail in our wagon folders and are pictured so plainly that it's almost like looking at the wagon itself. Some dealer near you handles these wagons and has samples set up for you to see. Drop us a line and we'll send you the booklets and folders. We'll also tell you where you can see a **Columbus** or **Weber** wagon so you won't have to waste any time looking for it. Write to us today.

**International Harvester Company of America**  
(INCORPORATED)

Crawford, Neb.   Denver, Col.   Helena, Mont.   Portland, Ore.  
San Francisco, Cal.   Spokane, Wash.   Salt Lake City, Utah

**Ridley, Houlding & Co.**

**COVENT GARDEN, LONDON**

Points to remember when consigning  
apples to the London Market

- 1.—We Specialize in Apples
- 2.—All Consignments Receive our Personal Attention
- 3.—The Fruit is Sold by Private Treaty

**CABLE ADDRESS: BOTANIZING, LONDON**



PORTLAND, OREGON

# Portland Hotel

The hotel which made Portland, Oregon, famous  
Most Desirably Located. In the Center of Shopping and Theatre District  
Covers a City Block.

**Broadway, Sixth, Morrison and Yamhill Streets**

European Plan—\$1.00 per day and upward

Write for Portland Hotel Booklet.

**GEO. C. OBER, Manager**

## Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT  
IN THE ENTIRE WEST

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

### Arcadia Orchards Company

Deer Park, Washington

# Printing

*For the* **Fruit Grower  
Manufacturer  
and Merchant**

<b>Labels</b>	<b>Booklets</b>	<b>Blank Books</b>
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**Write for Prices and Specifications. We can supply  
your wants quickly, accurately and economically**

*We print "Better Fruit"*

**F. W. Baltes and Company**  
Portland, Oregon

brown in color. During the summer time the mites live entirely in the blisters, producing eggs and young therein. At the approach of cold weather the mites migrate to the bark of the tree, hiding themselves in rough bark around buds and twigs. According to Dr. A. L. Melander, entomologist of the Washington Experiment Station at Pullman, the best control measure seems to be a spraying of sulphur-lime given in early spring, when the buds are swelling. After the mites have entered the leaf tissue they cannot be exterminated, although spraying with colloidal sulphur is claimed to afford some relief. This finely-divided sulphur keeps the mites from spreading, especially to the fruit. In case of bad infestation the fruit is scarred with similar blisters.—Washington State Agricultural College Bulletin.

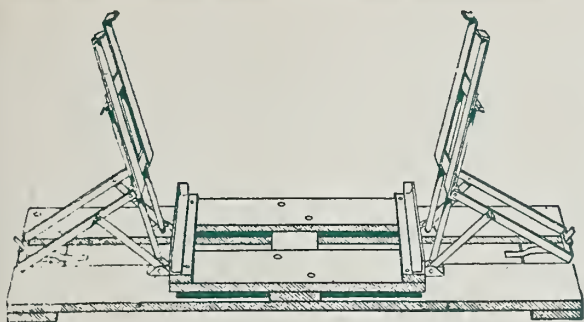
Mr. H. E. Smith, of Payette, Idaho, who has an extensive acquaintance with the fruit growers in Idaho, and a large acquaintance with the trade, having been one of the district sales managers for the North Pacific Fruit Distributors for the past few years, with headquarters in Chicago, is going into business for himself, having issued a circular which is headed, "H. E. Smith, Marketing Agents, Northwestern Fruits, for Idaho, Washington and Idaho, in box apples, prunes, peaches, pears, etc., with headquarters in Walla Walla, Washington."

Yakima reports convey the information that through the efforts of W. H. Paulhamus, president of the Growers' Council, and H. F. Davidson, the prices on Bartlett pears were advanced in August from \$15 a ton to \$17.50.

### Coming Events

Chehalis County Fair, Elma, Washington, September 1 to 5.  
California State Fair, Sacramento, California, September 4 to 11.  
Columbia River Interstate Fair, Vancouver, Washington, September 6 to 11.  
Washington-Idaho Roundup, Garfield, Washington, September 9 to 11.  
Colorado State Fair, Pueblo, Colorado, September 13 to 18.  
Spokane Interstate Fair, Spokane, Washington, September 13 to 18.  
Walla Walla Fair, Walla Walla, Washington, September 13 to 18.  
Montana State Fair, Helena, Montana, September 20 to 25.  
Washington State Fair, North Yakima, Washington, September 20 to 26.  
Latah County Fair, Moseow, Idaho, September 21 to 25.  
Nelson Agricultural Fair, Nelson, British Columbia, September 22 to 24.  
Cowlitz County Fair, Woodland, Washington, September 23 to 25.  
Utah State Fair, Salt Lake City, Utah, September 27 to October 6.  
Oregon State Fair, Salem, Oregon, September 27 to October 2.  
Lincoln County Fair, Davenport, Washington, September 29 to October 1.  
Western Montana Fair, Missoula, Montana, September 29 to October 2.  
Wilbur Fair, Wilbur, Washington, October 5 to 8.  
Stevens County Livestock Show, Colville, Washington, October 26 to 29.  
Arizona State Fair, Phoenix, Arizona, November 8 to 13.  
Cascade International Stock Show, North Yakima, Washington, November 22 to 27.  
Lewisston Livestock Show, Lewiston, Idaho, November 29 to December 4.  
Pacific International Livestock Exposition, North Portland, Oregon, December 6 to 11.





## The Perfection Lid Press

Price \$7.50

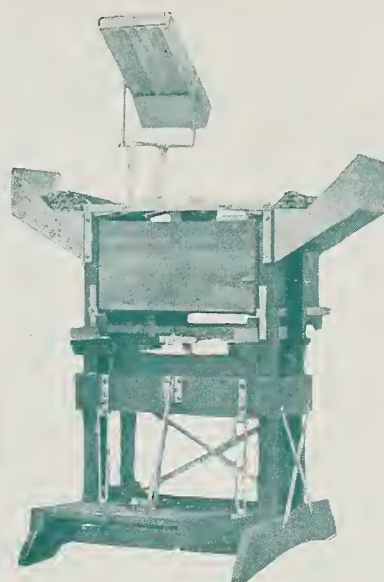
It is easy to insure a good tightly pressed, well nailed and good appearing package when our Perfection or Lightning Presses are used.

Both presses are built for rapid, accurate work and are well worth further the investigation possible by writing today for our new catalog of Orchard and Packing House Supplies, which will be gladly mailed you.

This catalog contains articles every fruit grower will eventually need.

**A Poorly Pressed and Nailed Box is a poor advertisement of good fruit**

The appearance of the package carries with it either a good or bad impression of the contents.



## The Lightning Lid Press

Price \$28.00

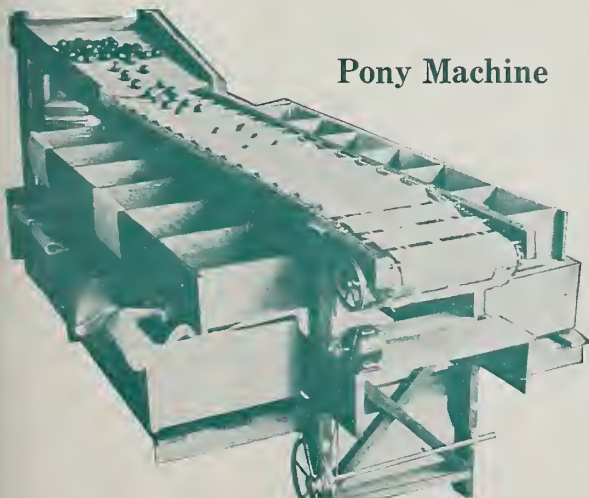
**The Hardie Manufacturing Co., 49 North Front Street Portland, Oregon**

# Palmer Fruit Sizer

**Standard Machine, \$200, Floor space 6x24 feet.**

Sizes three grades at a time. Capacity two carloads daily.

{ First grade into nine sizes.  
Second grade into four to six sizes.  
Third grade into three to five sizes.



Pony Machine

## Pony Machine, \$150

Floor space 6x12 feet.

Sizes two grades at a time into four or six sizes as desired.  
Capacity one carload per day.

Either machine can be used for boxes or barrels. Openings on both machines expand uniformly from 1½ inches to 4 inches square.

Illustration shows sorting table attachment; also travelling belts for sorting table.

Machine discharges the fruit into boxes or barrels without bruising.

Box packing can be done direct from the machine or, if preferred, on separate tables, giving the grower a chance to work his packers on the particular sizes and grades he wishes packed first.

Write or wire for catalogue and prices.

**PALMER BUCKET COMPANY, Hood River, Ore.**



# The World

# Our Orchard

**I**N ALL FIELDS OF ENDEAVOR no work is more worthy of recognition than that of the salesman. To be successful these pioneers of commerce must possess attributes which would bring world wide recognition to men in other walks of life.

The salesmen of our country are largely responsible for the development of the great industries which are the bulwark of the nation. Most leaders of business were at one time salesmen; nearly every self-made man has served on the firing line of salesmanship. No house in the trade had humbler beginnings than the firm of

## Steinhardt & Kelly

Built upon the fundamental principles of

**Honor, Honesty, Strength and Service**  
which are the foundations of all successful business enterprises, the house of

## Steinhardt & Kelly

stands today preeminent at the very top of the fruit industry of the United States.

# Our Market

# The World